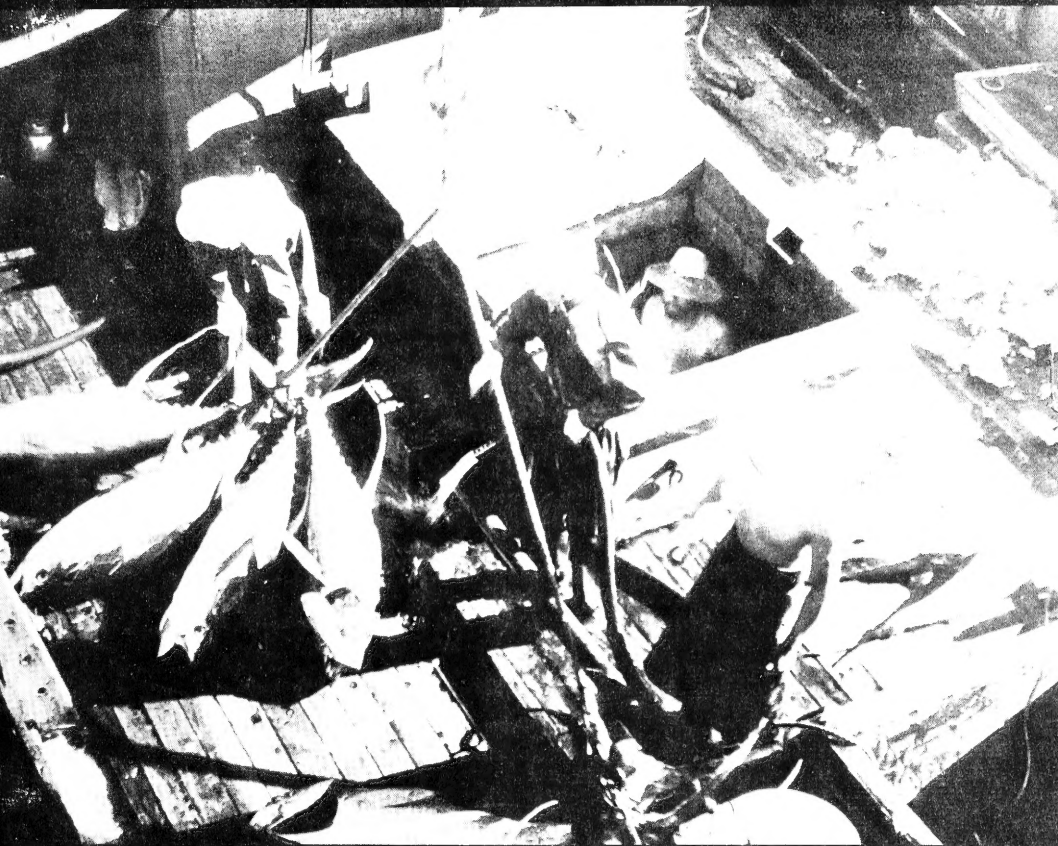


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COMMERCIAL FISHERIES REVIEW



A REVIEW OF DEVELOPMENTS AND NEWS OF THE FISHERY INDUSTRIES PREPARED IN THE BRANCH OF COMMERCIAL FISHERIES

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JAPANESE TUNA-MOTHERSHIP OPERATIONS IN THE WESTERN EQUATORIAL PACIFIC OCEAN

By Bell M. Shimada*

INTRODUCTION

Motherships were used by the Japanese with notable success to exploit the rich salmon and crab resources of the north Pacific Ocean in prewar days; however, these mobile processing units were not similarly associated with the tuna fisheries. Perhaps the most important of several considerations which precluded the introduction of the mothership system during the 1930's, when the expansion of the offshore fishery for tuna was at its greatest, were:

1. JAPANESE FISHING COMPANIES WERE ALREADY REAPING LARGE PROFITS FROM THE NORTHERN PACIFIC FISHERIES
2. BECAUSE THE POTENTIALLY RICH EQUATORIAL TUNA FISHERY WAS COMPARATIVELY UNDEVELOPED AT THAT TIME.

Consequently, they were not interested in transferring their large vessels to a then comparatively undeveloped equatorial Pacific Ocean tuna fishery.

Growth of the winter fishery for albacore in the mid-Pacific during this period focused some interest on motherships as a means of effectively harvesting this distant resource. However, no concrete efforts were made in this direction because it was thought that climatic conditions would present operational problems of insurmountable difficulty. Furthermore, the exigencies of war on the Asiatic mainland were already starting to have their effects on the Japanese fishing industry, and the larger vessels were being commandeered by the Navy. What plans, if any, the industry may have had for employing motherships in tuna fishing were completely disrupted by the outbreak of war with the United States in 1941.

Despite the lukewarm attitude of the Japanese fishing industry to proposals of using motherships in the tuna fishery, technical research of such operations was by no means lacking. In 1931, the Japanese Government sent a mothership to Indo-Australian waters for the dual purpose of investigating the possibilities of using a processing ship with its own auxiliary fishing vessels to exploit distant tuna resources and to discover new fishing grounds. The expedition was repeated in 1932 and 1933, and the results were published in Japanese government reports. As far as is known, however, no follow-up action was taken by the fishing industry even though these explorations revealed the presence of yellowfin tuna populations of sufficient magnitude to support a commercial fishery in the Celebes and Sulu Seas.

In 1948 and 1949, small mothership operations were attempted by the Japanese in waters around the Bonin Islands, and eastward to albacore grounds. These attempts were commercially unsuccessful because of poor fishing results and operational difficulties.

Elsewhere in the Pacific Ocean, the only other tuna-mothership operations were conducted experimentally by the United States with the Reconstruction Finance Corporation's Pacific Explorer, an American-built factory vessel. The Pacific Explorer,

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equipped to dry-freeze and store tuna, operated from January to July 1947 in waters off Central and South America (Carlson 1948).

A new phase of the Japanese tuna fisheries was launched on May 11, 1950, approximately $4\frac{1}{2}$ years after the close of World War II. The Commander-in-Chief Pacific and U. S. Pacific Fleet and High Commissioner of Trust Territory of the Pacific Islands, and the Supreme Commander for the Allied Powers (SCAP) gave permission to the Japanese (SCAP directive No. 2097, ¹ May 11, 1950) to send tuna-mother-ship expeditions to defined areas of the high seas adjacent to the Caroline, Marianas, and Marshall Islands.

This permission was granted subject to the following terms and conditions:

1. THAT RECORDS OF FISHING AND FISH CATCHES BE KEPT BY THE JAPANESE OPERATOR, AS SPECIFIED BY THE HIGH COMMISSIONER, TRUST TERRITORY OF THE PACIFIC ISLANDS.

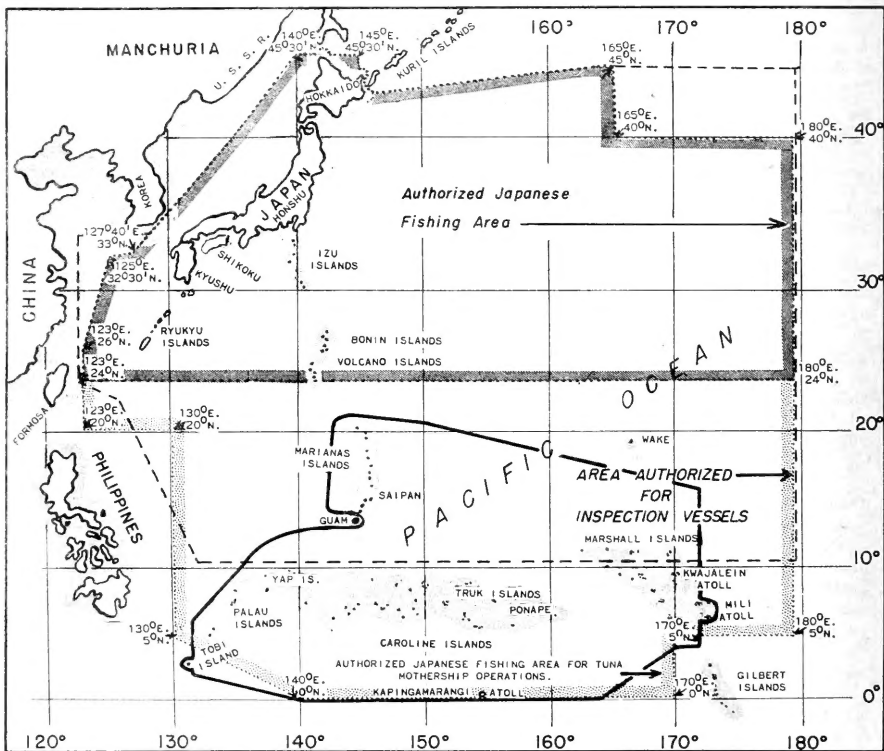


FIGURE 1 - HORIZONTALLY-LINED BORDER INDICATES EXTENT OF THE CINCPAC-SCAP AUTHORIZED JAPANESE FISHING AREA AS OF MAY 11, 1950. BROKEN BLACK LINE INDICATES AREA AUTHORIZED FOR JAPANESE INSPECTION VESSELS. DOTTED-STIPPLED BORDER SHOWS EXTENSION SOUTH OF 24° N. LATITUDE TO THE EQUATOR FOR JAPANESE TUNA MOTHER-SHIP OPERATIONS. SOLID BLACK LINE AROUND MARIANAS, MARSHALL, AND CAROLINE ISLANDS SHOWS THE U. S. TRUST TERRITORY OF THE PACIFIC ISLANDS.

¹/COMMERCIAL FISHERIES REVIEW, JUNE 1950, PP. 52-4.

2. THAT PROVISION BE MADE FOR A REPRESENTATIVE OF THE HIGH COMMISSIONER AND THE U. S. FISH AND WILDLIFE SERVICE TO BOARD OR ACCOMPANY VESSELS OF ANY EXPEDITION FOR PURPOSES OF OBSERVATION AND INSPECTION, AND THAT A REPRESENTATIVE OF SCAP ACCOMPANY EACH FLEET.
3. THAT PROVISION BE MADE FOR VESSELS OF THE FLEET TO REPORT THEIR POSITIONS DAILY BY RADIO.
4. THAT NO VESSEL OF THE EXPEDITION APPROACH CLOSER THAN THREE MILES TO ANY LAND NOT UNDER THE ADMINISTRATIVE CONTROL OF THE JAPANESE GOVERNMENT.
5. THAT SUPERVISION OF ALL OPERATIONS WAS BY RESPONSIBLE JAPANESE OFFICERS WHO WOULD INSURE UNDER ALLIED SUPERVISION RIGOROUS COMPLIANCE WITH ALL STIPULATIONS OF THE DIRECTIVE.

Immediately following the issuance of this directive, the work of organizing and conducting the first large-scale, commercial tuna-mothership expedition in Japanese fisheries history was undertaken by the Taiyo Fishing Company, Ltd., one of Japan's largest and most aggressive fishery concerns. The fleet consisted of a large refrigerated carrier ship detached from the company's Antarctic whaling fleet, 13 company tuna-fishing vessels, and 12 independently-owned vessels. It was assembled and outfitted for three months' operations in the newly-approved area (Figure 1). That a part of the mothership fleet was able to leave Tokyo on June 8, 1950, less than a month after formal approval, reflects not only the readiness of the Japanese to take advantage of their opportunity to fish the South Seas again, but also the haste with which preparations were made.

The following report deals with various aspects of Japanese tuna fishing and mothership operations observed while the author was with the expedition from June 12, 1950, to September 14, 1950, as a scientific and technical observer for the High Commissioner for the Trust Territory of the Pacific Islands and the U. S. Fish and Wildlife Service. Information and data regarding mothership practices and equipment were obtained largely through interviews with vessel personnel and through personal observation. Methods of fishing long-line gear were witnessed at sea aboard a fishing vessel attached to the fleet.

Statistics included in this report, together with other source material, were made available by the High Commissioner of the Trust Territories, the Supreme Commander for the Allied powers, and the Japanese Government.

OPERATING AREA AND SEASON

The mothership arrived on the fishing grounds on June 17, 1950. Fishing by 5 of her catchers commenced on that date in the vicinity of $4^{\circ} 35' N.$ latitude and $143^{\circ} 32' E.$ longitude (Figure 2). The remaining fishing vessels joined the fleet shortly thereafter, and the last catcher began her operations on July 14. As the season progressed, the expedition as a unit gradually moved eastward at a weekly rate of about 100 miles. The catchers confined their latitudinal activities between 1° and $9^{\circ} N.$ latitude. Shifts in position of the mothership and fishing vessels and rate of longitudinal movement were determined largely by the success of fishing encountered in any one area. Fishing was conducted mostly between 1° and $5^{\circ} N.$ latitude because of previous knowledge that the best catches of tuna could be made in this zone. When processing operations aboard the mothership were halted on September 2, the vessel's position was $5^{\circ} 04' N.$ latitude and $157^{\circ} 01' E.$ longitude. All fishing ceased on September 5, 1950, and the expedition headed back to Japan.

OPERATING RESTRICTIONS

Although the Japanese were authorized by SCAP to fish as far south as the Equator, for purposes of control the Japanese Government, through its representatives,

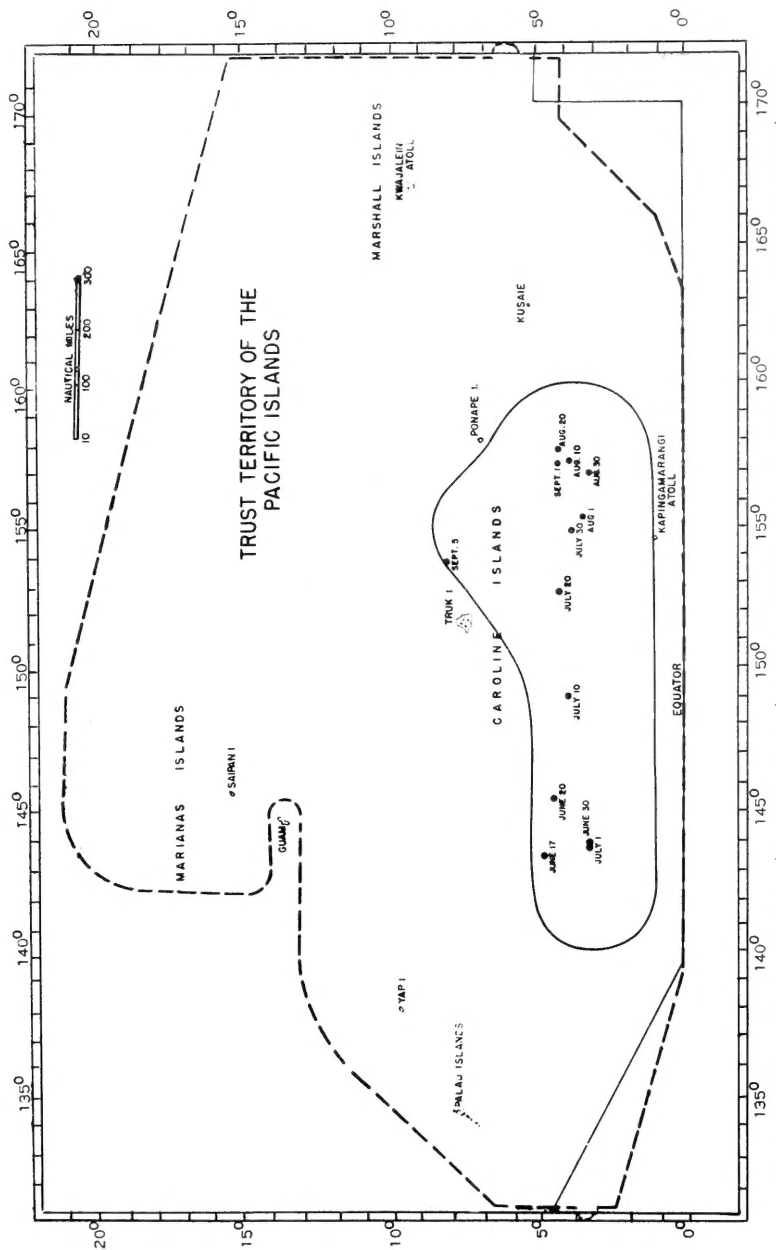


FIGURE 2 - GENERAL AREA OF OPERATIONS (SOLID BLACK LINE) IN WATERS SURROUNDING TRUST TERRITORY OF THE PACIFIC ISLANDS (DOTTED LINE) OF THE FIRST JAPANESE TUNA-MOTHERSHIP EXPEDITION. DATED POSITIONS ARE THOSE OF THE MOTHERSHIP DURING THE SEASON, FROM JUNE 17 TO SEPTEMBER 5, 1950.

limited the southward movements of the mothership to 3° N. latitude, and the maximum distance that any catcher boat could operate from the mothership was set at 200 miles. Catchers desiring to fish beyond the 200-mile limit were allowed to make application for permission to do so. Furthermore, no fishing was permitted south of 1° N. latitude or within 10 miles of any islands.

FISHING OPERATIONS

Fishing Vessels: The fishing potential of the expedition was vested in the 25 long-line fishing vessels from various Japanese ports. These vessels ranged in size from four small 60-80 gross-metric-ton wooden vessels to modern steel-built ships of 150-200 gross tons, which comprised the rest of the fleet. Over-all length of the latter ranged from about 70 to 110 feet.

The typical Japanese long-line vessel resembles an Atlantic well-deck trawler and is characterized by a strong shear line (Figure 3). Power is usually supplied by a Diesel engine and, in many cases, auxiliary gaff-rigged sails are also carried to supplement the main engine. The wheel house is located amidships and the engine room is aft. This setup provides ample working space forward, which is free of excess deck structures, except for the long-line hauler which may be situated on the port or starboard side. Often, two long-line haulers are so installed that fishing gear may be taken in from either side. Removable doors are cut into the bulwark for bringing fish and gear aboard.

Holds for the catch are located beneath the well deck and are generally not equipped with refrigeration equipment. Ammonia coils, if present, are for the purpose of preventing the rapid melting of ice rather than for freezing fish.

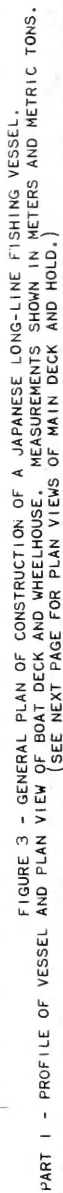
Crew's quarters are located forward in the forecabin and aft of the engine room. Because of the number of men carried by a long-line vessel (18 to 27 according to size of boat), these quarters are generally cramped. The galley is on the main deck aft and has space only for the preparation of food; no room is provided for eating indoors.

Fishing Gear: The long line is a form of gear developed and used by the Japanese to fish deep levels of the ocean for large pelagic fish, such as tunas and spearfishes. A good description of the evolution of long-line gear, the construction of component parts, and methods of fishing is given by Shapiro (1950) in his report on the Japanese long-line fishery.

The basic unit of long-line fishing gear is the "basket".^{2/} A basket consists of several sections of main or trunk line, usually cotton, to which are tied a number of branch lines and a float line (Figure 4). Each branch line is made up of a length of cotton line; or a "sekiyama" or "shanawa" (cotton thread wound around a core of wire or fiber); a wire leader and hook. Lines, including the "sekiyama," are coated with tar to prevent deterioration and to add rigidity for ease of handling.

The branch lines, float line, and sections of the main line comprising a basket are tied together with knots so that the gear may be easily taken apart (Figure 4, Insets 1, 2, 3, 4, 5, 6, 7). This is of advantage when it is necessary to replace a branch line or to remove a branch line or entire basket from the main set of gear. The knots that are used differ with the fishermen but are usually those which, while simple to tie and untie, are not bulky and will hold firmly. A swivel is sometimes placed at the end of the cotton section of a branch line before the "sekiyama" to keep the branch line from twisting and tangling.

^{2/}THIS TERM ORIGINATED FROM THE FACT THAT FORMERLY SECTIONS OF LONG-LINE GEAR WERE KEPT IN BAMBOO BASKETS. THIS METHOD OF STOWING GEAR, ALTHOUGH STILL IN USE IN PARTS OF NORTHERN JAPAN, IS USUALLY BEING DISCARDED AND NOW A BASKET OF GEAR IS USUALLY TIED INTO A BUNDLE, USING A FOUR-PIECE SLING MADE OF OUTWORN COTTON LINE.



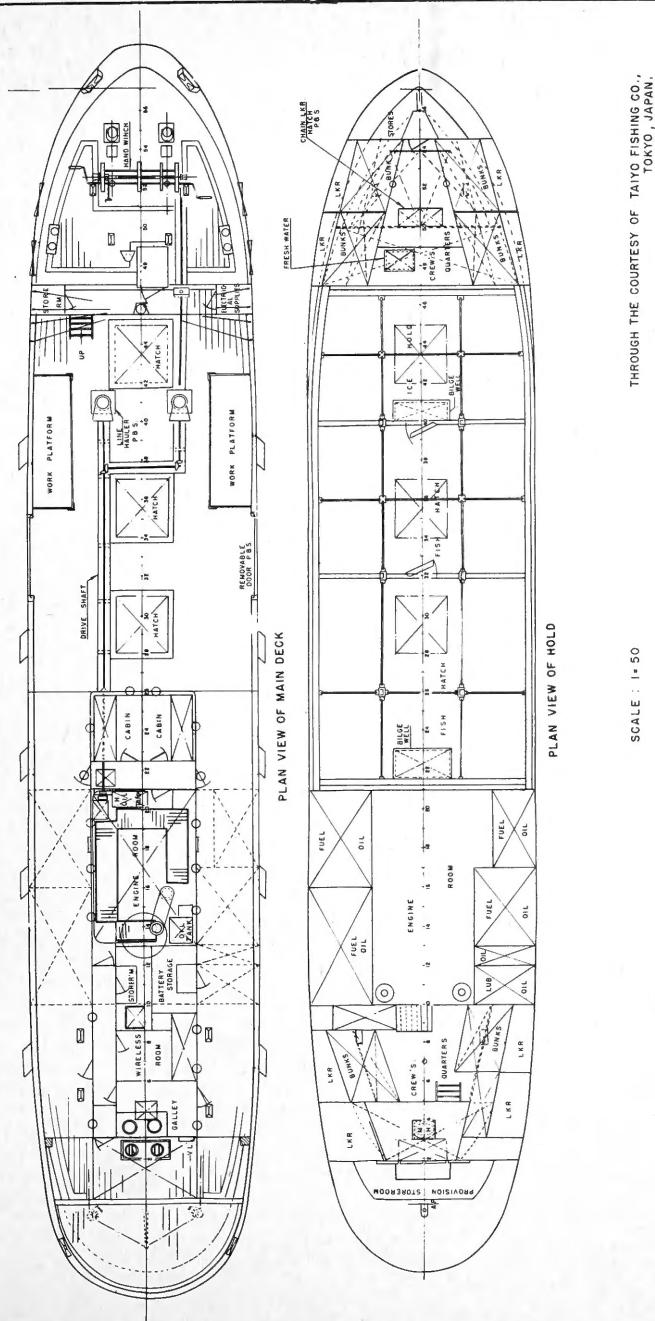


FIGURE 3 - GENERAL PLAN OF CONSTRUCTION OF A JAPANESE LONG-LINE FISHING VESSEL.
PART II - PLAN VIEWS OF MAIN DECK AND HOLD. MEASUREMENTS SHOWN IN METERS AND METRIC TONS.
(SEE PREVIOUS PAGE FOR PROFILE AND PLAN VIEW OF BOAT DECK AND WHEELHOUSE.)

The baskets are tied in one continuous line when a set is made. Glass or metal floats, varying in diameter from 10 to 12 inches, are used to buoy the main and branch lines at subsurface levels. These floats are tied to bamboo poles which, in turn, are tied to the float lines. A pole and float combination, therefore, marks the junction of each basket of gear. The bamboo poles, often referred to as "flags," serve as markers to show the fisherman the location and in what direction his gear is set. Together with the floats, the flags also indicate by their movements at the surface whether fish have been caught on the branch lines (Figure 5). Struggling fish will usually cause the floats to bob and the flags to fall over to one side. Dead fish on the lines will by their weight draw two float-and-pole combinations together, and the floats in this case will either be submerged or awash while the flags will be vertical and with little wavering.

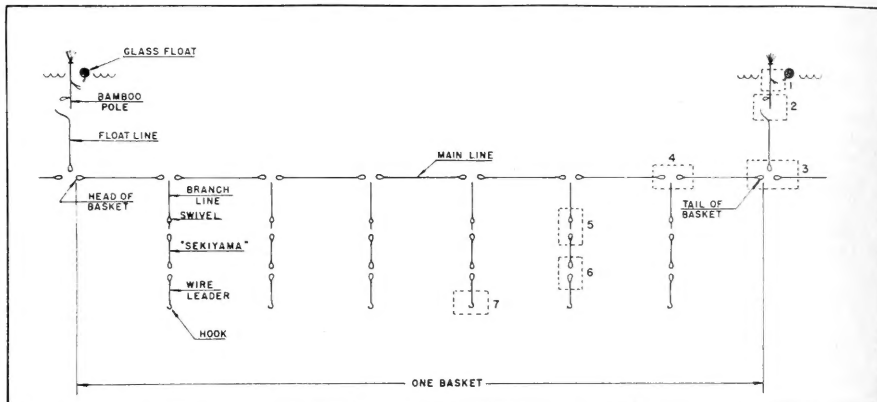


FIGURE 4 - DIAGRAM SHOWING THE COMPONENT PARTS OF A BASKET OF TUNA LONG-LINE FISHING GEAR. INSETS ILLUSTRATE KNOTS THAT ARE GENERALLY USED IN ASSEMBLING THE DIFFERENT SECTIONS. (SEE INSETS ON PAGE 9.)

Light buoys are used to mark the location of the gear at night and to guide the fishermen when retrieving gear during the hours of darkness. In comparatively calm waters, light buoys are usually placed at 20- to 25- basket intervals and only for the portion of the gear which is expected to be brought in after dark. In areas where rough weather prevails, more buoys are used and they are spaced closer together.



FIGURE 5 - A BAMBOO POLE AND GLASS FLOAT AT THE SURFACE. CALM SEAS AS SHOWN PREVAILED THROUGHOUT THE SEASON.

Because of the calm seas encountered in the low latitudes of the western Pacific, the vessels of the expedition were able to fish a maximum number of baskets. The number of baskets per vessel set daily varied from 250 for the smaller vessels to 400 baskets for the larger catchers, the average number being 350 baskets or the equivalent of about 65 miles of main line. In the north central Pacific long-line fishery for albacore, where the vessels are normally engaged during the winter months, they are usually unable to fish more than 250 baskets per day because of weather conditions. Table 1 gives the amount and dimensions of gear used by the expedition's long-line vessels.



INSET 1



INSET 4



INSET 2



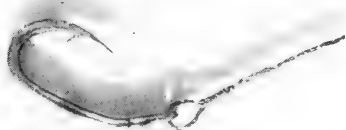
INSET 5



INSET 3



INSET 6



INSET 7

INSETS FOR FIGURE 4 WHICH APPEARS ON PAGE 8.

Methods of Locating Fishing Grounds: Japanese tuna fishermen have long been aware of the fact that the marginal areas of two different water masses in juxtaposition are productive of fish. In northern waters, these zones of discontinuity are usually characterized by a steep surface temperature gradient. According to the fishermen, however, such current contact areas are not as well defined in lower latitudes because surface water temperatures do not vary as greatly for the different current systems. For this reason, water temperatures were not relied upon to any extent by fishermen of the expedition as an aid to locating productive grounds associated with current borders.

Table 1 - Amount and Dimensions of Long-Line Gear Fished by Vessels of the Tuna-Mothership Expedition

Name of Vessel	Gross Tonnage	Baskets	Total Length of Basket	Branch Lines	Length of Cotton Section of Branch Line	Length of "Seki-yama"	Length of Float Line
Asahi No. 1	60	250	894	5	36	24	72
Asahi No. 7	84	250	894	5	42	24	95
Azuma No. 1	138	360	1253	6	36	24	78
Azuma No. 2	139	400	894	5	48	24	84
Azuma No. 3	147	350	1043	5	39	24	66
Azuma No. 5	146	380	894	5	39	24	66
Azuma No. 6	145	350	1043	6	36	24	72
Azuma No. 7	145	340	1043	6	36	24	60
Daikoku No. 12	136	370	894	5	48	24	72
Genai No. 1	149	350	917	7	36	30	78
Kaiko	147	352	894	5	36	24	66
Kotoshiro No. 1	157	400	894	5	36	22	48
Kuroshio No. 7	160	370	1074	5	36	24	89
Marutaka No. 11	146	320	1043	6	36	18	66
Nankai No. 2	76	250	894	5	36	24	75
Nankai No. 3	80	300	894	5	36	24	95
Reiyo	142	370	1043	6	36	30	42
Sasayama No. 7	158	350	894	5	24	24	72
Seiyo No. 2	144	360	1127	6	48	15	72
Shinko No. 30	150	350	1074	5	36	24	72
Shinko No. 80	206	360	1043	6	24	24	95
Shinyo No. 8	154	340	1074	5	36	24	72
Shiratori	158	404	1074	5	36	24	63
Sumiyoshi No. 6	196	380	1043	6	36	21	78
Sumiyoshi No. 21	158	333	1043	6	30	24	72

1/ LEADER LENGTHS, NOT INCLUDED, AVERAGED 6 FT.; ALL LENGTHS ARE TO THE NEAREST FOOT.

Current direction was used as a general guide, however, in determining the eddy areas of the equatorial countercurrent, which flows from west to east between 2° and 10° N. latitude in the western Pacific (Shapiro 1948). Its width and position depend upon the season and area. The equatorial countercurrent is bordered on the north by the westerly flowing north equatorial current and on the south by the south equatorial current, which also travels in a westerly direction. Since the average seasonal position of the equatorial countercurrent has been fairly well determined for the western equatorial region by Japanese hydrographic surveys, the fishermen were able to estimate where the boundaries were in general by the use of charts. The drift of vessels and gear then served as additional checks. (A general discussion of factors which govern the selection of fishing grounds in the equatorial countercurrent and hydrographic features associated with good fishing may be found in a report by Inanami, 1942.)

Long lines were generally set at an angle to the flow of the equatorial countercurrent to assure the gear a greater chance of fishing a part of the current contact zone and to prevent tangling of the lines. When certain sections of the gear yielded better catches than others, the lines were reset to fish such areas

more heavily. Sets were seldom made in the vicinity of islands because of operating restrictions and the opinion that larger fish are not to be found near the islands. Furthermore, it was believed that sharks were more abundant in inshore waters than in areas removed from land.

Methods of Fishing Long-line Gear: The techniques of setting and retrieving gear as well as other operational aspects of a typical long-line vessel will be described in detail for one of the more productive catchers of the fleet, the Shiratori Maru (Figure 6). This 158-gross-metric-ton vessel was built in 1949 at a cost of about 30 million yen (approximately US\$83,000 at present exchange rates). Specific details of her dimensions and propulsion machinery are given in Table 2.

Table 2 - Dimensions and Mechanical Equipment of the Shiratori Maru

Gross tonnage - 158.21 metric tons	Fresh water capacity - 11.79 metric tons
Over-all length- 29.5 meters (96.8 ft.)	Main engine - 400 h.p., 4 cycle, 6 cyl. Diesel
Beam - 6.1 meters (20 ft.)	Auxiliary engine - 60 h.p., 4 cycle Diesel
Depth - 3.05 meters (10 ft.)	Generators - 1-40 kw., 1-3 kw. generator
Fuel capacity - 58.4 metric tons	Refrigeration equipment - 1-8.5-metric ton refrigeration machine

The Shiratori Maru had a complement of 27 men, the largest crew of any of the catchers; crews on other long-line vessels numbered from 18 to 25. The actual master of the vessel was the master fisherman and not the captain. On some ships the duties of captain and master fisherman are fulfilled by one man, but in most cases, these two positions are held separately. The former is usually held by a young man who has qualified for a license as recently required by Japanese maritime regulations, and the latter is held by an older, experienced fisherman. All responsibilities connected with the navigation of the Shiratori Maru to and from the fishing grounds and the keeping of necessary logs and records were delegated to the captain, while the master fisherman not only determined when and where to fish, but assumed complete command when fishing began. The captain at this time was relegated to the position of an ordinary fisherman. Major decisions affecting vessel operations were made by the master fisherman who also maintained discipline among the crew.



FIGURE 6 - THE SHIRATORI MARU, A JAPANESE TUNA LONG-LINER.

As is common practice among most long-line vessels, the baskets of long-line gear and floats aboard the Shiratori Maru were stowed behind the wheelhouse on the

boat deck. Bamboo poles and light buoys were kept in racks located in the main deck passageways.

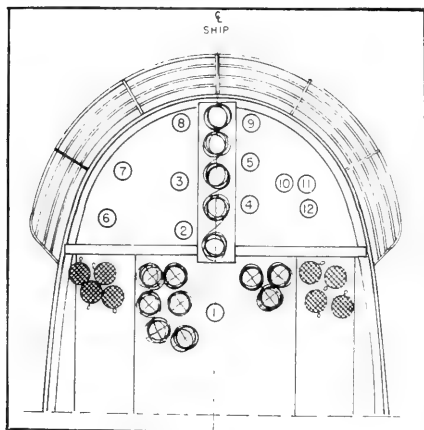


FIGURE 7 - DIAGRAM SHOWING USUAL POSITIONS OF THE FISHERMEN WHEN SETTING LONG-LINE GEAR FROM THE STERN OF THE SHIRATORI MARU.

When ready to make a set, bait, either frozen sardines (Sardinia melanostica), or sauries (Colalabis saira), or both, was brought aft to the stern from the forward bait-storage hold. The work of assembling, baiting, and setting the long lines from the stern then commenced. The sequences of preparing and setting long lines and the work done by the crew members can probably be better understood by referring to the diagram in Figure 7. The corresponding numbers given below outline the duties of each crew member participating in the setting operation. As illustrated in the diagram, the Shiratori Maru had an outboard fishing rack for pole-and-line fishing which served as a platform for setting long-line gear. A wooden table was inclined from the boat deck to the stern rail to bring the gear below.

- MAN NO. 1 - UNTIES SLING HOLDING INDIVIDUAL BASKETS TOGETHER AND SLIDES LOOSE BASKETS BELOW ON WOODEN TABLE; ALSO PASSES GLASS FLOATS TO NO. 6; MAY BE ASSISTED BY ANOTHER MAN.
- MAN NO. 2 - SHOVES BASKETS ALONG TABLE AND TIES HEAD OF ONE BASKET TO TAIL OF ANOTHER, THUS JOINING BASKETS.
- MAN NO. 3 - UNCOILS FLOAT LINE WHICH IS ON TOP OF EACH BASKET, PASSES FREE END TO MAN NO. 7, AND STANDS BY WITH REMAINDER OF COIL; THROWS FLOAT LINE OUT WHEN MAN NO. 7 LETS FLOAT AND POLE OVERBOARD.
- MAN NO. 4 - FREES TUCKED-IN HOOKS FROM COILS (LEADER AND "SEKIYAMA") AND BAITS HOOKS.
- MAN NO. 5 - ASSISTS IN BAITING.
- MAN NO. 6 - TIES GLASS FLOATS TO BAMBOO POLES AND PASSES POLES TO MAN NO. 7.
- MAN NO. 7 - RECEIVES END OF FLOAT LINE FROM MAN NO. 3 AND TIES TO BAMBOO POLE WITH FLOAT ATTACHED; THROWS COMBINATION OVERBOARD AT BEGINNING OF EACH BASKET IN COORDINATION WITH MAN NO. 3
- MAN NO. 8 - THROWS OUT COILS OF MAIN LINE.
- MAN NO. 9 - THROWS OUT BAIT HOOKS AND BRANCH LINES.
- MEN NOS. 10 AND 11 - BREAK OUT BAIT FROM BOXES AND SEPARATE INTO INDIVIDUAL FISH, DISCARDING POOR ONES.
- MAN NO 12 AND OTHERS- ASSIST WITH BRINGING LIGHT BUOYS AFT AND TYING ON LIGHT BUOYS AS REQUIRED; RENDER GENERAL ASSISTANCE AND SERVE AS RELIEF.

A basket of gear is set as follows: (1) the glass float and bamboo pole to which is tied the float line of the basket is thrown overboard to starboard as the vessel is under way; (2) the section of main line following the float line is cast directly astern; (3) a baited branch line is then cast to port and the main line following is cast to stern again. The procedure is repeated until the entire basket of gear has been laid. An extra float line and large marker flag is used to begin the first basket of a set and to end the last basket.

Whenever possible gear is set along a straight course. The baskets are laid while the vessel is fully under way, the speed varying from 6 to 8 knots. The Shiratori Maru usually set 400 baskets of gear daily and required from $3\frac{1}{2}$ to 4 hours to get the lines into the water, an average of about half a minute being required per basket. The actual distance travelled by the vessel was about half the total length of the main line because of the slack allowed for sag and adjustment of the gear to current forces. Setting usually commenced before sunrise at about 3 a.m. and was completed by 7:00 a.m. at the latest. The vessel then either drifted for several hours within sight of the flag marking the end of the set or headed back up the line of gear. The decision to remain at the end of the set or to return to the head was made by the master fisherman and was determined largely by the direction in which the following set was to be made and noon catch reports of other long-line vessels. If, for example, a set was made in a westerly direction and the plan was to fish in this general direction, the vessel returned to the head of the set. After the job of retrieving the gear was completed, there was time enough for the short run to the next day's fishing area. However, if reports hinted that there was better fishing to the east, the plan of operation was altered accordingly. The vessel would pick up the gear from the end of the line set last after allowing the gear to fish a while, thus reversing the direction of the sets.

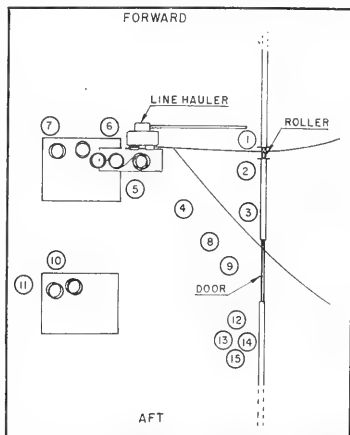


FIGURE 8 - DIAGRAM SHOWING USUAL POSITIONS OF THE FISHERMEN WHEN RETRIEVING LONG-LINE GEAR.

When returning to the head of a set, a watch was continually kept to see whether fish had been caught on any of the branch lines. If there were signs of captured fish, the basket or baskets were taken in without untying them from the main set. The fish were removed, and the branch lines were rebaited and returned to the water.

This not only prevented fish from being damaged by sharks but increased the efficiency of the gear.

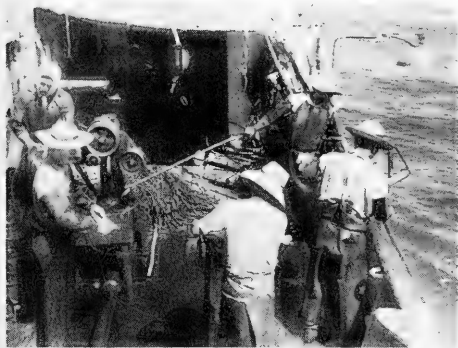


FIGURE 9 - RETRIEVING LONG-LINE GEAR ABOARD THE SHIRATORI MARU. NOTE THE CONSTRUCTION OF THE LONG-LINE HAULER. ROPE SLINGS FOR BUNDLING INDIVIDUAL BASKETS ARE PILED UP BEHIND THE HAULER.

The laborious task of picking up the long lines usually started around noon and continued without stop until midnight. The average time required to bring in 400 baskets of gear was about 12 hours, but varied from 10 to 14 hours depending upon the number of fish that were caught.

In picking up gear, the vessel was kept constantly under way at a speed of two to three knots. The necessary maneuvering required to maintain the ship at a 15° - 45° angle to the main line required close coordination between the bridge and engine room, and a bell system was rigged between these two stations to expedite communi-

cations. The usual procedure was to run the engine intermittently to approximate the speed with which the line could be brought in. Reverse was seldom used. Figures 8 and 9 show the position of the crew members when recovering gear from the head of a set. The duties of individuals and sequences of handling are:

- MAN NO. 1 - HANDLES CLUTCH OF LINE HAULER AND REGULATES SPEED AT WHICH MAIN LINE IS TAKEN IN; WATCHES DIRECTION FROM WHICH MAIN LINE IS COMING AND GUIDES MAN AT WHEEL BY HAND SIGNALS.
- MAN NO. 2 - WATCHES MAIN LINE AS IT COMES IN AND PASSES BRANCH AND FLOAT LINES OVER ROLLER TO MAN NO. 3 AS KNOTS GO THROUGH LINE HAULER; ADJUSTS ROLLER TO DIRECTION OF LINE.
- MAN NO. 3 - COILS LEADER AND "SEKIYAMA" AND TUCKS HOOK AROUND THIS COIL, THEN COILS PART OF COTTON SECTION OF BRANCH LINE AND HANDS ALL TO MAN NO. 4; ALSO COILS PART OF FLOAT LINE AFTER BAMBOO POLE AND FLOAT HAVE BEEN REMOVED.
- MAN NO. 4 - FINISHES COILING BRANCH AND FLOAT LINES AND GIVES COILS TO MAN NO. 6.
- MAN NO. 5 - WATCHES MAIN LINE AS IT COMES THROUGH LINE HAULER AND WHEN SECTION OF MAIN LINE BETWEEN BRANCH LINES IS COILED, MOVES COIL FROM BENEATH LINE HAULER TOWARD MAN NO. 6; WHEN BRANCH LINE HAS BEEN PLACED ATOP MAIN LINE BY MAN NO. 6, TAKES NEXT SECTION OF MAIN LINE ALREADY COILED AND PLACES IT ATOP BRANCH LINE; REPEATS UNTIL BASKET IS COMPLETE; UNTIES TAIL OF BASKET FROM HEAD OF NEXT BASKET.
- MAN NO. 6 - TAKES COILED BRANCH LINE FROM MAN NO. 4 AND WHEN SECTION OF MAIN LINE HAS BEEN MOVED FROM BENEATH LINE HAULER BY MAN NO. 5, PLACES BRANCH LINE ATOP THIS COIL; COILS FLOAT LINE, WHICH IS LAST ATTACHED LINE OF BASKET TO COME IN, AND HANDS TO MAN NO. 7.
- MAN NO. 7 - ARRANGES COILS OF MAIN LINE, BRANCH LINES, AND FLOAT LINE IN ORDER, BUNDLES BASKET TOGETHER WITH A FOUR-PIECE COTTON ROPE SLING AND TAKES BASKET AFT FOR STOWAGE.
- MAN NO. 8 - PULLS IN BAMBOO POLE AND BUOYS; UNTIES FLOAT LINE FROM POLE.
- MAN NO. 9 - ASSISTS MAN NO. 8 IN PULLING IN POLES AND BUOYS; REMOVES GLASS FLOATS.
- MEN NOS.
10 AND 11 - REARRANGE BASKETS NOT PROPERLY COILED; TIE IN BRANCH LINES PREVIOUSLY REMOVED AND REPLACE WORN LEADERS; ASSIST MEN NOS. 2, 3, AND 4 WHEN NECESSARY.
- MEN NOS.
12, 13, 14,
15, AND
OTHERS - BRING IN FISH; GUT AND STORE CATCHES; STOW FLAGS, BUOYS AND GEAR; ACT AS RELIEF.

The sequence in which a basket of gear is brought aboard is reverse of that in which it is set; that is, (1) the main line is coiled as it comes aboard, and (2) a branch line is taken in and placed on top of the main line. This is repeated until all five branch lines have been retrieved. The basket is completed by bringing in the float line. The head of the basket is then untied from the tail of the next basket and the basket is bundled and stowed.

Fish hooked on branch lines were brought in quickly by two or three of the crew members and gaffed when alongside. They were then pulled aboard through the door cut in the rail, killed if necessary, and immediately eviscerated if of a species other than yellowfin or albacore tuna. The landing of larger marlins and sharks frequently gave considerable trouble and, furthermore, tangled the lines badly. These fish, as well as any tune which were taken alive, were killed by the fishermen who beat them on the head with large wooden mallets. Fish were usually stored

below in ice immediately after capture, but occasionally when fishing was productive and the crew was busily engaged in hauling in both fish and lines, the catch was allowed to lay on deck for about fifteen to thirty minutes before storage. During the afternoons when air temperatures were high, the practice was to ice the fish as soon as practicable.

The work of retrieving and stowing gear and disposing of the catch required the immediate services of about 18 men, and everyone aboard except the wireless operator participated in the operations at some time during the day. No regular shifts were employed, and the men took turns at various jobs. The individual fishermen consequently worked from 16 to 18 hours per day when on the fishing grounds. What little rest they obtained was either during the few hours after the work of taking in gear had been completed or when a set was finished. Longer respites were enjoyed when the catcher proceeded to and from the mothership or when a shift was made in fishing grounds.

Total Landings of Fish: From June 17, 1950, when fishing started, to the close of processing operations on September 2, deliveries of fish to the mothership by long-line vessels totaled approximately 7,683,000 pounds. Many of the catchers continued to land fish after making their last trips to the mothership and did not cease operations until September 5. These later catches were landed directly in Japanese ports and amounted to over 435,000 pounds. The total catch, therefore, of the first long-line fleet in 79 days of operation in waters south of the Caroline Islands was about 8,118,800 pounds (Table 3) with a reported landed value of 145,493,500 yen (about US\$404,000). To catch this quantity of fish, 1,417 sets of gear were made

Table 3 - Total Catch, by Species, of the First Japanese
Tuna-Mothership Expedition, June-September, 1950¹

Species	Quantity Caught
	Lbs.
Yellowfin tuna (<i>Neothunnus macropterus</i>)	4,574,358
Big-eyed tuna (<i>Parathunnus sibi</i>)	699,014
Albacore (<i>Thunnus germon</i>)	65,378
Bluefin tuna (<i>Thunnus orientalis</i>)	3,430
Skipjack (<i>Katsuwonus pelamis</i>)	6,968
Black marlin (<i>Makaira mazara</i>)	1,760,389
White marlin (<i>Makaira marlina</i>)	48,182
Striped marlin (<i>Makaira mitsukurii</i>)	1,229
Sailfish ² (<i>Istiophorus orientalis</i>)	28,160
Swordfish (<i>Xiphias gladius</i>)	13,656
Shark	895,022
Others ³	23,048
Total	8,118,834

¹/STATISTICS PROVIDED BY THE JAPANESE FISHERY AGENCY AND CONVERTED TO POUNDS, USING THE CONVERSION FACTOR OF 8.27 LBS. = 1 KAN.
²/INCLUDES SHORT-NOSED MARLIN (*TETRAPTURUS BREVIROSTRIS*).
³/INCLUDES BARRACUDA (*SPHYRAENA ARGENTEA*), WAHOO (*ACANTHOCYBIUM SOLANDRI*), AND DOLPHIN (*CORYPHAENA HIPPURUS*).

by the vessels, equivalent, if joined in one continuous line, to 93,000 miles of line, more than enough to encircle the world three and a half times. Incidental catches of the smaller tuna were made by pole-and-line gear, but these were of minor quantity.

Composition of Catch: Fish included in the catches may be conveniently separated into four general categories: the tunas, spearfishes, sharks, and miscellan-

eous varieties of fish. Of these, the tunas and spearfishes, being commercially the most valuable, were the species most sought after by the fishermen.

The tunas were represented in the catch by the yellowfin tuna (Neothunnus macropterus), big-eyed tuna (Parathunnus sibi), oceanic skipjack (Katsuwonus pelamis), albacore (Thunnus germon), and the bluefin tuna (Thunnus orientalis). The yellowfin tuna was by far the most abundant of these five species, comprising over 50 percent of all the fish landed. Catches of this species occurred throughout the area fished, from 1° N. latitude to 9° N. latitude and from 143° E. longitude to 160° E. longitude. The full range of this particular species was not covered by the fishing vessels, but fishing results seemed to verify the observation that in western equatorial waters of the northern hemisphere, yellowfin tuna are most concentrated in the zone between the Equator and 5° N. latitude.

Individual yellowfin captured by long lines ranged in size from 80 centimeters to 160 centimeters with fish of about 130 centimeters, averaging from 80 to 90 pounds. The largest individuals weighed up to 150 pounds while smaller fish, usually those caught at the surface by pole-and-line gear, weighed but a few pounds.

Of the total tuna catch, the big-eyed tuna (Parathunnus sibi) ranked second to the yellowfin tuna on the basis of weight and number. This species apparently prefers a more temperate distribution than the yellowfin for it was generally caught at deeper levels and appeared to increase in abundance north of 5° N. latitude. Like the yellowfin, the big-eyed tuna varied in size from small individuals of about 5 pounds in weight to large fish of over 150 pounds.

From all reports, the oceanic skipjack (Katsuwonus pelamis) abounds in waters bordering the many islands found in the western Pacific Ocean and is also found in offshore waters. Being more of a surface-inhabiting fish, however, the number of fish of this species caught by long-line vessels was small in contrast to the catches of the deeper-living yellowfin and big-eyed tuna. Schools of skipjack were often found to be congregated beneath the glass floats of the long lines and these schools were fished by pole and line, using artificial lures.

Albacore (Thunnus germon) and bluefin tuna (Thunnus orientalis), which are species normally confined to temperate waters, comprised a small percentage of the total catch and were caught throughout the season.

The spearfishes consisted of the black marlin (Makaira mazara), white marlin (Makaira marlina), short-nosed marlin (Tetrapterus brevirostris), striped marlin (Makaira mitsukurii), sailfish (Istiophorus orientalis), and the true swordfish (Xiphias gladius). On the basis of landings by weight, the black marlin was the most abundant of these species and was second to the yellowfin tuna. Some individuals of black marlin weighed upwards of 1,000 pounds.

Sharks brought in by the fishermen were not identified, but some species of these families were noted: Carcharinidae, Galeorhinidae, Alopiidae, Sphyrnidae and Lamiidae. Other fish delivered to the mothership were barracuda (Sphyraena argentea), wahoo (Acantnocybium solandri), and an occasional dolphin (Coryphaena hippurus).

Variations in Fishing Success: Throughout the season and over the entire fishing area, the daily catches made by the fishing vessels of the expedition fluctuated markedly. Figure 10 shows the average catch per boat reported for each day's operations. Fishing was generally good when operations first commenced. As the peak of productive fishing said to be associated with May and June passed and the catcher fleet was augmented, catches fell to an average of from 2-2½ metric tons per boat

daily. With the eastward movement of the expedition and access to new grounds, the catches improved. Excellent fishing was experienced for several days during mid-July in waters adjacent to Kapingamarangi Atoll ($1^{\circ} 05' \text{ N. } 154^{\circ} 45' \text{ E.}$), from about

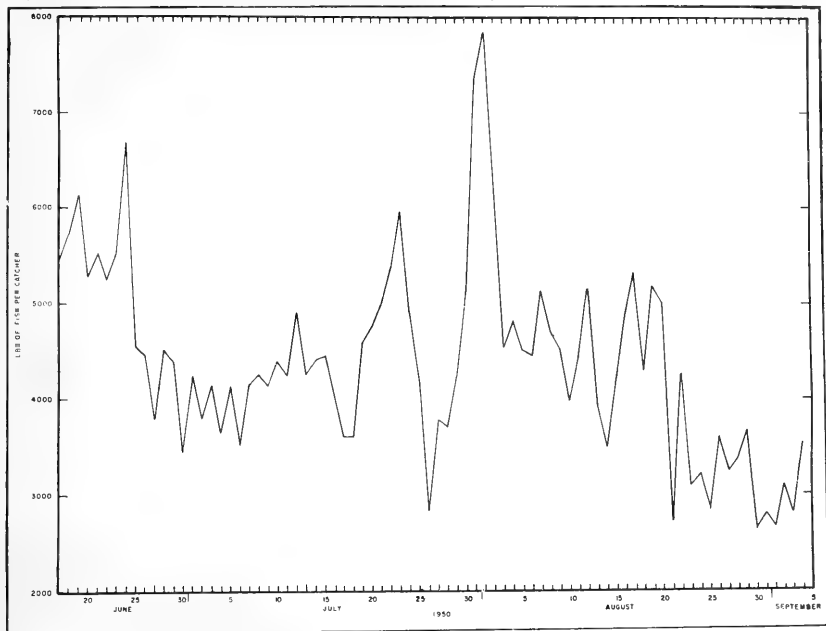


FIGURE 10 - AVERAGE CATCH OF FISH PER DAY PER CATCHER BASED ON DAILY REPORTED LANDINGS. (REFER TO FIGURE 2 FOR GENERAL AREA IN WHICH CATCHES WERE MADE DURING THE SEASON.)

153° to 154° E. longitude and between 1° and 2° N. latitude. The average landings per vessel decreased inexplicably thereafter to less than $1\frac{1}{2}$ tons per day as a majority of the catchers continued to fish in the same general area. In late July and early August, fishermen encountered the best fishing of the season in the area to the east of Kapingamarangi Atoll (between 156° and 158° E. longitude), and in the same parallels of latitude where good fishing was previously experienced (1° to 2° N. latitude). Judging from reported current drifts, this latter zone was probably within the equatorial countercurrent and close to its southern border. Here, some vessels caught as much as 8 tons per day's fishing and the highest reported individual catch for a single operation was 11 tons, mostly yellowfin tuna. Catches gradually fell to lower levels in middle and late August with a daily average below $1\frac{1}{2}$ tons per boat at the close of the season as the expedition shifted northward out of the productive areas in anticipation of the trip home.

The "catch per unit of effort" for the Japanese long-line fishery is usually expressed as the number of fish caught per 100 hooks fished per day. This is a useful index to the success of fishing at a particular time. Data of this nature have been compiled for the prewar Japanese long-line fishery in equatorial waters by Nakamura (1943). Based upon an analysis of fishing boat logs and research vessel records for a period of several years, Nakamura reported an average of 6.05 fish

(tunas and spearfishes) for each 100 hooks set in the area between 0° and 5° N. latitude and between 130° and 180° E. longitude. In contrast, vessels of the 1950 expedition averaged 3.23 tunas and spearfishes for each 100 hooks fished, the average for all species being 3.97. These figures do not include fish damaged by sharks which usually comprised from 5-10 percent of the total number of fish hooked. The highest catch ratio reported for one day's fishing was 17 fish per 100 hooks. Although these data are not comparable with Nakamura's figure in terms of space, time, and other factors, it illustrates that the expedition vessels did not achieve as high an average catch per 100 hooks as that previously reported for the same general area of operations.

This apparent difference in the success of fishing was attributed by the fishermen chiefly to a decreased abundance of tuna stocks despite the fact that these fish were not subject to exploitation during World War II. Estimates of the decrease in abundance averaged 20 percent among those fishermen interviewed, but ran as high as 50 percent. Causes for the decrease were believed to be:

- (1) VARIATIONS IN ENVIRONMENTAL CONDITIONS
- (2) EFFECTS OF THE WAR AND THE ATOM BOMB EXPERIMENTS
- (3) DEPLETION IN STOCK THROUGH OVERFISHING IN PREWAR YEARS

The fishermen were inclined to think that changes in hydrographic conditions were probably most responsible for the lower catches made by the expedition. Adversity in success of fishing was also ascribed to restrictions in latitude of movement by the catchers. It should be noted in this regard that very few applications were made for permission to fish beyond the specified 200 miles from the mothership.

MOTHERSHIP VESSEL OPERATIONS

The Mothership: The Tenyo Maru No. 2, a 10,619-gross-metric-ton vessel, measuring approximately 550 feet in over-all length (Figure 11), was primarily designed to handle whale meat. It was selected to accompany the tuna expedition as a mothership because her facilities could be used to freeze tuna and other fish at sea. The storage space of this vessel was sufficiently large to handle the tonnage of fish expected from the season's fishing. Furthermore, it was idle during the summer and participation in the tuna operation would not prevent the vessel from engaging in the winter's Antarctic whaling. For this particular assignment no changes were made in the existing shipboard equipment because of the trial nature of the expedition and the lack of time for preparation. The only major addition was an ice

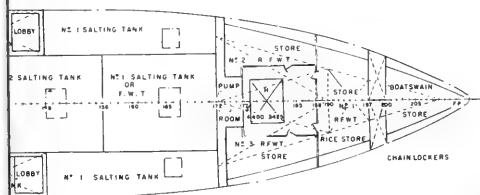
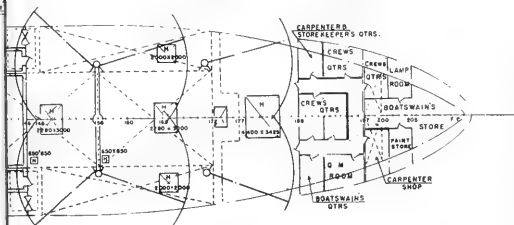
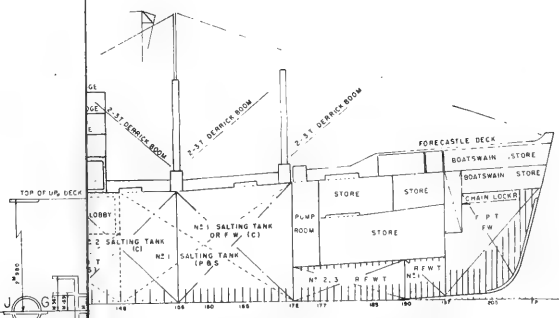
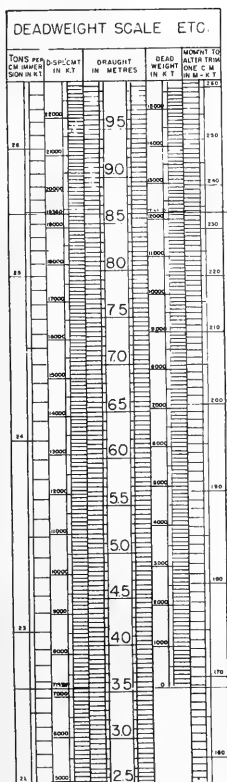


FIGURE 11 - THE MOTHERSHIP, TENYO MARU NO. 2.

crusher which was installed on the main deck. With this exception, the details of construction for the mothership are given in Figure 12.

A total of 171 persons was carried by the Tenyo Maru No. 2, including the ship's crew, workers, office and supervisory personnel, and the various observers required

FIGURE 12 - PLAN OF M.S. TENYO MARU NO
TUNA MOTHERSHIP DURING THE FIRST EX-
TYPE IN THE EQUATORIAL PACIFIC OCEAN
WAR II.

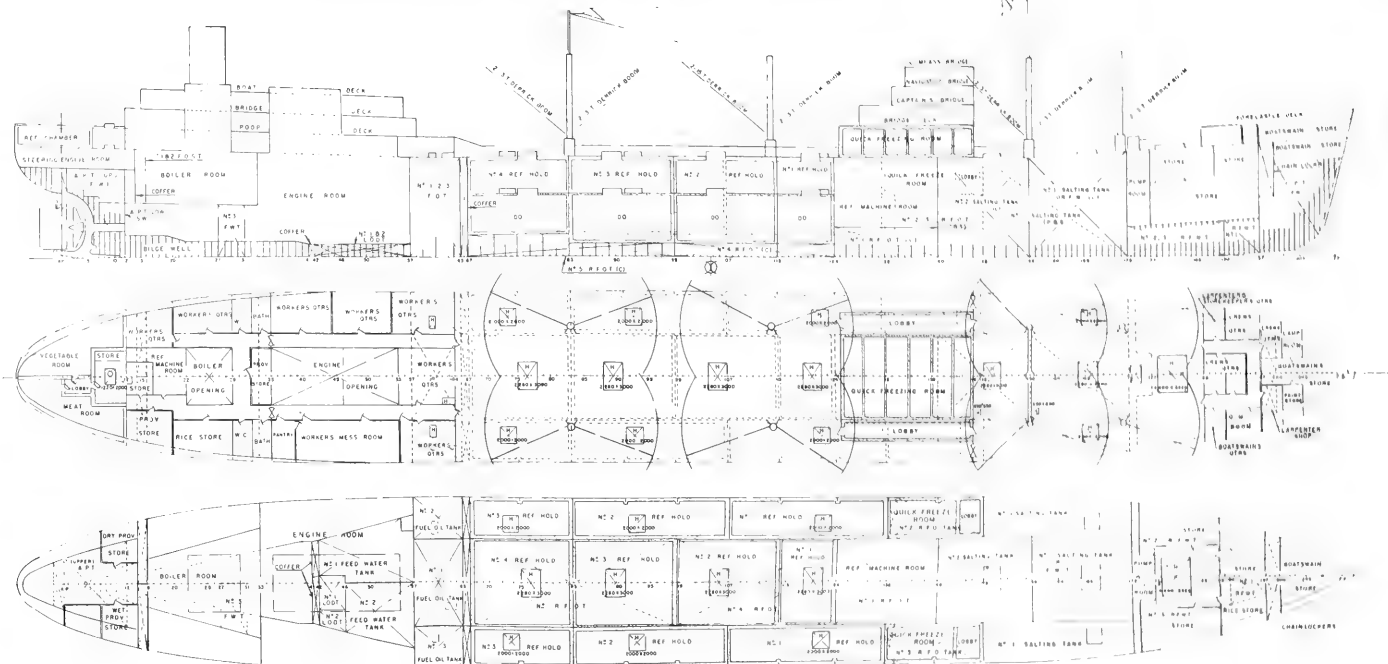
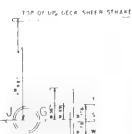
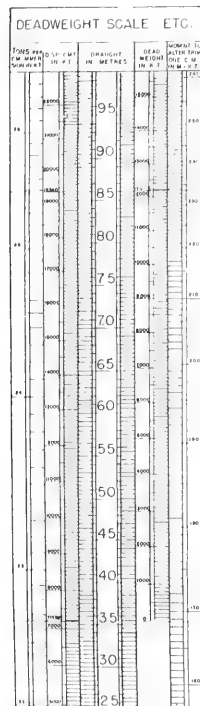


PRINCIPAL PARTICULARS	
LENGTH OVER ALL	M 150.824
LENGTH BETWEEN PERPENDICULARS	M 132.823
BREADTH MOULDED	M 20.000
DEPTH MOULDED	M 11.500
TONNAGE	GROSS TONNAGE T 10,619.000
	NET TONNAGE T 7,091.000

CAPACITY OF SALTING TANKS	
NAME OF TANK	CAPACITY L.C.G. V.C.G. GUB METRE FROM B.L.
N°1 SALTING TANK (C)	156-172 769.186 -40.093 6.983
N°1 SALTING TANK (P)	148-172 769.186 -40.093 6.983
N°1	148-172 769.186 -40.093 6.983
N°2	140-156 1,327.065 -32.975 5.997
TOTAL	4,253.342

CAPACITY OF L.O.D TANK	
NAME OF TANK	CAPACITY L.C.G. V.C.G. GUB METRE FROM B.L.
N°1 LUB O.D. TANK	42-46 18.091 16.644 45.433 0.770
N°2	5-760 5.318 45.212 1.013
TOTAL	23.871 21.962

M.S. TENYO MARU No.2
CAPACITY PLAN & DEADWEIGHT SCALE
SCALE 1/200



NAME OF STORE	CAPACITY OF STORES		L.C.G	M.C.G
	FRIDGE CUBIC METRE	CAPACITY CUBIC METRE		
BORTHAN STORE (UP DECK)	184.76	115.64	70.026	1.0476
LAMP ROOM (UP DECK)	1.00	0.49	70.15	1.05
PAINT STORE (UP DECK)	20.5	20.5	70.80	1.105
BORTHAN STORE (2ND DECK)	220.7	135.08	71.404	1.13
WATER TANK (UP DECK)	1.00	0.49	71.404	1.13
RICE STORE (2ND DECK)	117.85	93.07	72.001	1.134
STORE (2ND DECK)	114.18	136.35	76.427	1.095
BRIDGE DECK	174.88	134.35	85.470	1.03
WATER TANK (UP DECK)	1.00	0.49	85.47	1.03
WATER TANK (UP DECK)	143.63	6.43	10.35	1.63
WATER TANK (UP DECK)	134.18	32.148	24.206	1.50
WATER TANK (UP DECK)	1.00	0.49	24.206	1.50
WATER TANK (UP DECK)	15.10	13.844	6.372	1.50
WATER TANK (UP DECK)	17.20	1.73	6.440	1.50
WATER TANK (UP DECK)	1.00	0.49	6.440	1.50
WATER TANK (UP DECK)	31.30	1.374	5.300	1.63
PROVISION STORE (UP DECK)	31.30	31.32	53.160	1.55
PROVISION STORE (UP DECK)	55.18	9.408	1.75	1.55
PROVISION STORE (UP DECK)	55.18	9.408	1.75	1.55
PROVISION STORE (2ND DECK)	7.4	32.460	6.98	1.404
WATER TANK (UP DECK)	7.4	32.460	6.98	1.404
WATER TANK (UP DECK)	7.4	32.460	6.98	1.404
WATER TANK (UP DECK)	12.85	15.45	4.42	1.35
WATER TANK (UP DECK)	174.19	1.200	19.89	1.66
WATER TANK (UP DECK)	1.00	0.49	19.89	1.66
WATER TANK (UP DECK)	1.00	0.49	19.89	1.66
TOTAL	2730	879.20	107.50	1.55

CAPACITY OF FUEL OIL TANKS						SG 0355	
NAME OF TANK	FRAME NO.	CAPACITY	LCG	VCG	WGT	WGT	WGT
		CUB. M.	TON	CM	CM	TON	TON
N ^o 1 FUEL OIL TANK	31-63	685.555	550.437	32.342	9.804		
N ^o 2		312.311	254.814	32.342	5.182		
N ^o 3		312.311	254.814	32.342	5.182		
N ^o 1 RESERVE FUEL OIL TANK	174-140	402.476	326.495	32.342	10.851		
N ^o 2		184.193.037	147.490	32.342	3.887		
N ^o 3		293.037	237.490	32.342	3.887		
N ^o 4	99-24	281.989	242.829	32.342	6.000		
N ^o 5	67-99	153.036	121.958	32.342	3.887		
N ^o 6 SETTLEMENT TANK	14-6	38.432	31.554	32.342	0.917		
		18.456	15.958	32.342	0.917		
TOTAL		5507.844	4492.421				

CAPACITY OF WATER TANKS					SW 1025	SW 1000
NAME OF TANK	FRAME NO.	CAPACITY CUB M	TON	LCC PER TON	FCG PER TON	
N01 RESERVE PW TANK	46-57	18.830	68.81%	-54.85	2.555	
N02	72	18.830	68.81%	-54.85	2.555	
N03	46-57	18.830	68.81%	-54.85	2.555	
N04 FEED WATER TANK	46-57	18.830	68.81%	-54.85	2.555	
N05	46-57	18.830	68.81%	-54.85	2.555	
N06 3 RD F.W. TANK	46-57	18.830	68.81%	-54.85	2.555	
N07 1 ST 2 ND 3 RD F.W. TANK	46-57	18.830	68.81%	-54.85	2.555	
FORE PEAK TANK (1)	37-2	18.830	68.81%	-54.85	2.555	
1 ST PEAK TANK (2)	37-2	18.830	68.81%	-54.85	2.555	
2 ND PEAK TANK (3)	37-2	18.830	68.81%	-54.85	2.555	
3 RD PEAK TANK (4)	37-2	18.830	68.81%	-54.85	2.555	
4 TH PEAK TANK (5)	37-2	18.830	68.81%	-54.85	2.555	
5 TH PEAK TANK (6)	37-2	18.830	68.81%	-54.85	2.555	
6 TH PEAK TANK (7)	37-2	18.830	68.81%	-54.85	2.555	
7 TH PEAK TANK (8)	37-2	18.830	68.81%	-54.85	2.555	
8 TH PEAK TANK (9)	37-2	18.830	68.81%	-54.85	2.555	
9 TH PEAK TANK (10)	37-2	18.830	68.81%	-54.85	2.555	
10 TH PEAK TANK (11)	37-2	18.830	68.81%	-54.85	2.555	
11 TH PEAK TANK (12)	37-2	18.830	68.81%	-54.85	2.555	
12 TH PEAK TANK (13)	37-2	18.830	68.81%	-54.85	2.555	
13 TH PEAK TANK (14)	37-2	18.830	68.81%	-54.85	2.555	
14 TH PEAK TANK (15)	37-2	18.830	68.81%	-54.85	2.555	
15 TH PEAK TANK (16)	37-2	18.830	68.81%	-54.85	2.555	
16 TH PEAK TANK (17)	37-2	18.830	68.81%	-54.85	2.555	
17 TH PEAK TANK (18)	37-2	18.830	68.81%	-54.85	2.555	
18 TH PEAK TANK (19)	37-2	18.830	68.81%	-54.85	2.555	
19 TH PEAK TANK (20)	37-2	18.830	68.81%	-54.85	2.555	
20 TH PEAK TANK (21)	37-2	18.830	68.81%	-54.85	2.555	
21 TH PEAK TANK (22)	37-2	18.830	68.81%	-54.85	2.555	
22 TH PEAK TANK (23)	37-2	18.830	68.81%	-54.85	2.555	
23 TH PEAK TANK (24)	37-2	18.830	68.81%	-54.85	2.555	
24 TH PEAK TANK (25)	37-2	18.830	68.81%	-54.85	2.555	
25 TH PEAK TANK (26)	37-2	18.830	68.81%	-54.85	2.555	
26 TH PEAK TANK (27)	37-2	18.830	68.81%	-54.85	2.555	
27 TH PEAK TANK (28)	37-2	18.830	68.81%	-54.85	2.555	
28 TH PEAK TANK (29)	37-2	18.830	68.81%	-54.85	2.555	
29 TH PEAK TANK (30)	37-2	18.830	68.81%	-54.85	2.555	
30 TH PEAK TANK (31)	37-2	18.830	68.81%	-54.85	2.555	
31 TH PEAK TANK (32)	37-2	18.830	68.81%	-54.85	2.555	
32 TH PEAK TANK (33)	37-2	18.830	68.81%	-54.85	2.555	
33 TH PEAK TANK (34)	37-2	18.830	68.81%	-54.85	2.555	
34 TH PEAK TANK (35)	37-2	18.830	68.81%	-54.85	2.555	
35 TH PEAK TANK (36)	37-2	18.830	68.81%	-54.85	2.555	
36 TH PEAK TANK (37)	37-2	18.830	68.81%	-54.85	2.555	
37 TH PEAK TANK (38)	37-2	18.830	68.81%	-54.85	2.555	
38 TH PEAK TANK (39)	37-2	18.830	68.81%	-54.85	2.555	
39 TH PEAK TANK (40)	37-2	18.830	68.81%	-54.85	2.555	
40 TH PEAK TANK (41)	37-2	18.830	68.81%	-54.85	2.555	
41 TH PEAK TANK (42)	37-2	18.830	68.81%	-54.85	2.555	
42 TH PEAK TANK (43)	37-2	18.830	68.81%	-54.85	2.555	
43 TH PEAK TANK (44)	37-2	18.830	68.81%	-54.85	2.555	
44 TH PEAK TANK (45)	37-2	18.830	68.81%	-54.85	2.555	
45 TH PEAK TANK (46)	37-2	18.830	68.81%	-54.85	2.555	
46 TH PEAK TANK (47)	37-2	18.830	68.81%	-54.85	2.555	
47 TH PEAK TANK (48)	37-2	18.830	68.81%	-54.85	2.555	
48 TH PEAK TANK (49)	37-2	18.830	68.81%	-54.85	2.555	
49 TH PEAK TANK (50)	37-2	18.830	68.81%	-54.85	2.555	
50 TH PEAK TANK (51)	37-2	18.830	68.81%	-54.85	2.555	
51 TH PEAK TANK (52)	37-2	18.830	68.81%	-54.85	2.555	
52 TH PEAK TANK (53)	37-2	18.830	68.81%	-54.85	2.555	
53 TH PEAK TANK (54)	37-2	18.830	68.81%	-54.85	2.555	
54 TH PEAK TANK (55)	37-2	18.830	68.81%	-54.85	2.555	
55 TH PEAK TANK (56)	37-2	18.830	68.81%	-54.85	2.555	
56 TH PEAK TANK (57)	37-2	18.830	68.81%	-54.85	2.555	
57 TH PEAK TANK (58)	37-2	18.830	68.81%	-54.85	2.555	
58 TH PEAK TANK (59)	37-2	18.830	68.81%	-54.85	2.555	
59 TH PEAK TANK (60)	37-2	18.830	68.81%	-54.85	2.555	
60 TH PEAK TANK (61)	37-2	18.830	68.81%	-54.85	2.555	
61 TH PEAK TANK (62)	37-2	18.830	68.81%	-54.85	2.555	
62 TH PEAK TANK (63)	37-2	18.830	68.81%	-54.85	2.555	
63 TH PEAK TANK (64)	37-2	18.830	68.81%	-54.85	2.555	
64 TH PEAK TANK (65)	37-2	18.830	68.81%	-54.85	2.555	
65 TH PEAK TANK (66)	37-2	18.830	68.81%	-54.85	2.555	
66 TH PEAK TANK (67)	37-2	18.830	68.81%	-54.85	2.555	
67 TH PEAK TANK (68)	37-2	18.830	68.81%	-54.85	2.555	
68 TH PEAK TANK (69)	37-2	18.830	68.81%	-54.85	2.555	
69 TH PEAK TANK (70)	37-2	18.830	68.81%	-54.85	2.555	
70 TH PEAK TANK (71)	37-2	18.830	68.81%	-54.85	2.555	
71 TH PEAK TANK (72)	37-2	18.830	68.81%	-54.85	2.555	
72 TH PEAK TANK (73)	37-2	18.830	68.81%	-54.85	2.555	
73 TH PEAK TANK (74)	37-2	18.830	68.81%	-54.85	2.555	
74 TH PEAK TANK (75)	37-2	18.830	68.81%	-54.85	2.555	
75 TH PEAK TANK (76)	37-2	18.830	68.81%	-54.85	2.555	
76 TH PEAK TANK (77)	37-2	18.830	68.81%	-54.85	2.555	
77 TH PEAK TANK (78)	37-2	18.830	68.81%	-54.85	2.555	
78 TH PEAK TANK (79)	37-2	18.830	68.81%	-54.85	2.555	
79 TH PEAK TANK (80)	37-2	18.830	68.81%	-54.85	2.555	
80 TH PEAK TANK (81)	37-2	18.830	68.81%	-54.85	2.555	
81 TH PEAK TANK (82)	37-2	18.830	68.81%	-54.85	2.555	
82 TH PEAK TANK (83)	37-2	18.830	68.81%	-54.85	2.555	
83 TH PEAK TANK (84)	37-2	18.830	68.81%	-54.85	2.555	
84 TH PEAK TANK (85)	37-2	18.830	68.81%	-54.85	2.555	
85 TH PEAK TANK (86)	37-2	18.830	68.81%	-54.85	2.555	
86 TH PEAK TANK (87)	37-2	18.830	68.81%	-54.85	2.555	
87 TH PEAK TANK (88)	37-2	18.830	68.81%	-54.85	2.555	
88 TH PEAK TANK (89)	37-2	18.830	68.81%	-54.85	2.555	
89 TH PEAK TANK (90)	37-2	18.830	68.81%	-54.85	2.555	
90 TH PEAK TANK (91)	37-2	18.830	68.81%	-54.85	2.555	
91 TH PEAK TANK (92)	37-2	18.830	68.81%	-54.85	2.555	
92 TH PEAK TANK (93)	37-2	18.830	68.81%	-54.85	2.555	
93 TH PEAK TANK (94)	37-2	18.830	68.81%	-54.85	2.555	
94 TH PEAK TANK (95)	37-2	18.830	68.81%	-54.85	2.555	
95 TH PEAK TANK (96)	37-2	18.830	68.81%	-54.85	2.555	
96 TH PEAK TANK (97)	37-2	18.830	68.81%	-54.85	2.555	
97 TH PEAK TANK (98)	37-2	18.830	68.81%	-54.85	2.555	
98 TH PEAK TANK (99)	37-2	18.830	68.81%	-54.85	2.555	
99 TH PEAK TANK (100)	37-2	18.830	68.81%	-54.85	2.555	
100 TH PEAK TANK (101)	37-2	18.830	68.81%	-54.85	2.555	
101 TH PEAK TANK (102)	37-2	18.830	68.81%	-54.85	2.555	
102 TH PEAK TANK (103)	37-2	18.830	68.81%	-54.85	2.555	
103 TH PEAK TANK (104)	37-2	18.830	68.81%	-54.85	2.555	
104 TH PEAK TANK (105)	37-2	18.830	68.81%	-54.85	2.555	
105 TH PEAK TANK (106)	37-2	18.830	68.81%	-54.85	2.555	
106 TH PEAK TANK (107)	37-2	18.830	68.81%	-54.85	2.555	
107 TH PEAK TANK (108)	37-2	18.830	68.81%	-54.85	2.555	
108 TH PEAK TANK (109)	37-2	18.830	68.81%	-54.85	2.555	
109 TH PEAK TANK (110)	37-2	18.830	68.81%	-54.85	2.555	
110 TH PEAK TANK (111)	37-2	18.830	68.81%	-54.85	2.555	
111 TH PEAK TANK (112)	37-2	18.830	68.81%	-54.85	2.555	
112 TH PEAK TANK (113)	37-2	18.830	68.81%	-54.85	2.555	
113 TH PEAK TANK (114)	37-2	18.830	68.81%	-54.85	2.555	
114 TH PEAK TANK (115)	37-2	18.830	68.81%	-54.85	2.555	
115 TH PEAK TANK (116)	37-2	18.830	68.81%	-54.85	2.555	
116 TH PEAK TANK (117)	37-2	18.830	68.81%	-54.85	2.555	
117 TH PEAK TANK (118)	37-2	18.830	68.81%	-54.85	2.555	
118 TH PEAK TANK (119)	37-2	18.830	68.81%	-54.85	2.555	
119 TH PEAK TANK (120)	37-2	18.830	68.81%	-54.85	2.555	
120 TH PEAK TANK (121)	37-2	18.830	68.81%	-54.85	2.555	
121 TH PEAK TANK (122)	37-2	18.830	68.81%	-54.85	2.555	
122 TH PEAK TANK (123)	37-2	18.830	68.81%	-54.85	2.555	
123 TH PEAK TANK (124)	37-2	18.830	68.81%	-54.85	2.555	
124 TH PEAK TANK (125)	37-2	18.830	68.81%	-54.85	2.555	
125 TH PEAK TANK (126)	37-2	18.830	68.81%	-54.85	2.555	
126 TH PEAK TANK (127)	37-2	18.830	68.81%	-54.85	2.555	
127 TH PEAK TANK (128)	37-2	18.830	68.81%	-54.85	2.555	
128 TH PEAK TANK (129)	37-2	18.830	68.81%	-54.85	2.555	
129 TH PEAK TANK (130)	37-2	18.830	68.81%	-54.85	2.555	
130 TH PEAK TANK (131)	37-2	18.830	68.81%	-54.85	2.555	
131 TH PEAK TANK (132)	37-2	18.830	68.81%	-54.85	2.555	
132 TH PEAK TANK (133)	37-2	18.830	68.81%	-54.85	2.555	
133 TH PEAK TANK (134)	37-2	18.830	68.81%	-54.85	2.555	
134 TH PEAK TANK (135)	37-2	18.830	68.81%	-54.85	2.555	
135 TH PEAK TANK (136)	37-2	18.830	68.81%	-54.85	2.555	
136 TH PEAK TANK (137)	37-2	18.830	68.81%	-54.85	2.555	
137 TH PEAK TANK (138)	37-2	18.830	68.81%	-54.85	2.555	
138 TH PEAK TANK (139)	37-2	18.830	68.81%	-54.85	2.555	
139 TH PEAK TANK (140)	37-2	18.830	68.81%	-54.85	2.555	
140 TH PEAK TANK (141)	37-2	18.830	68.81%	-54.85	2.555	
141 TH PEAK TANK (142)	37-2	18.830	68.81%	-54.85	2.555	
142 TH PEAK TANK (143)	37-2	18.830	68.81%	-54.85	2.555	
143 TH PEAK TANK (144)	37-2	18.830	68.81%	-54.85	2.555	
144 TH PEAK TANK (145)	37-2	18.830	68.81%	-54.85	2.555	
145 TH PEAK TANK (146)	37-2	18.830	68.81%	-54.85	2.555	
146 TH PEAK TANK (147)	37-2	18.830	68.81%	-54.85	2.555	
147 TH PEAK TANK (148)	37-2	18.830	68.81%	-54.85	2.555	

CAPACITY OF REF HOLD		CAPACITY OF REF HOLD	
NAME OF REF HOLD	FRAME NO.	CAPACITY	CO VGO
REF HOLD C (L) (L) (L)	107-1	233 200	1 0070 4 000
C (L) (L) (L)	107-2	218 240	1 0070 4 000
P (L) (L) (L)	107-3	218 240	1 0070 4 000
S (L) (L) (L)	107-4	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-5	218 240	1 0070 4 000
C (L) (L) (L)	107-6	218 240	1 0070 4 000
P (L) (L) (L)	107-7	218 240	1 0070 4 000
S (L) (L) (L)	107-8	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-9	218 240	1 0070 4 000
C (L) (L) (L)	107-10	218 240	1 0070 4 000
P (L) (L) (L)	107-11	218 240	1 0070 4 000
S (L) (L) (L)	107-12	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-13	218 240	1 0070 4 000
C (L) (L) (L)	107-14	218 240	1 0070 4 000
P (L) (L) (L)	107-15	218 240	1 0070 4 000
S (L) (L) (L)	107-16	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-17	218 240	1 0070 4 000
C (L) (L) (L)	107-18	218 240	1 0070 4 000
P (L) (L) (L)	107-19	218 240	1 0070 4 000
S (L) (L) (L)	107-20	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-21	218 240	1 0070 4 000
C (L) (L) (L)	107-22	218 240	1 0070 4 000
P (L) (L) (L)	107-23	218 240	1 0070 4 000
S (L) (L) (L)	107-24	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-25	218 240	1 0070 4 000
C (L) (L) (L)	107-26	218 240	1 0070 4 000
P (L) (L) (L)	107-27	218 240	1 0070 4 000
S (L) (L) (L)	107-28	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-29	218 240	1 0070 4 000
C (L) (L) (L)	107-30	218 240	1 0070 4 000
P (L) (L) (L)	107-31	218 240	1 0070 4 000
S (L) (L) (L)	107-32	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-33	218 240	1 0070 4 000
C (L) (L) (L)	107-34	218 240	1 0070 4 000
P (L) (L) (L)	107-35	218 240	1 0070 4 000
S (L) (L) (L)	107-36	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-37	218 240	1 0070 4 000
C (L) (L) (L)	107-38	218 240	1 0070 4 000
P (L) (L) (L)	107-39	218 240	1 0070 4 000
S (L) (L) (L)	107-40	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-41	218 240	1 0070 4 000
C (L) (L) (L)	107-42	218 240	1 0070 4 000
P (L) (L) (L)	107-43	218 240	1 0070 4 000
S (L) (L) (L)	107-44	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-45	218 240	1 0070 4 000
C (L) (L) (L)	107-46	218 240	1 0070 4 000
P (L) (L) (L)	107-47	218 240	1 0070 4 000
S (L) (L) (L)	107-48	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-49	218 240	1 0070 4 000
C (L) (L) (L)	107-50	218 240	1 0070 4 000
P (L) (L) (L)	107-51	218 240	1 0070 4 000
S (L) (L) (L)	107-52	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-53	218 240	1 0070 4 000
C (L) (L) (L)	107-54	218 240	1 0070 4 000
P (L) (L) (L)	107-55	218 240	1 0070 4 000
S (L) (L) (L)	107-56	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-57	218 240	1 0070 4 000
C (L) (L) (L)	107-58	218 240	1 0070 4 000
P (L) (L) (L)	107-59	218 240	1 0070 4 000
S (L) (L) (L)	107-60	218 240	1 0070 4 000
REF HOLD C (L) (L) (L)	107-61	218 240	1 0070 4 000
C (L) (L) (L)	107-62	218 240	1 0070 4 000

GENERAL		PARTICULARS	
LENGTH OVER ALL	M	160	024
LENGTH BETWEEN PERPENDICULARS	M	152	023
DEPTH AT MID DED	M	20	010
DEPTH MID DED	M	31	000
TONNAGE	GROSS TONNAGE	T	100 810
	NET TONNAGE	T	081 000

CAPACITY OF SAILING TANKS				
NAME OF TANK	FRAME NO.	CAPACITY CUBIC FEET	L/G	F/G
			TONS	TONS
NO. 1 SAILING TANK	56-112	144 000	40 000	40 000
NO. 2 SAILING TANK	148-112	144 000	40 000	40 000
NO. 3	148-112	144 000	40 000	40 000
NO. 4	148-112	144 000	40 000	40 000
NO. 5	148-112	144 000	40 000	40 000
NO. 6	148-112	144 000	40 000	40 000
NO. 7	148-112	144 000	40 000	40 000
NO. 8	148-112	144 000	40 000	40 000
NO. 9	148-112	144 000	40 000	40 000
NO. 10	148-112	144 000	40 000	40 000
NO. 11	148-112	144 000	40 000	40 000
NO. 12	148-112	144 000	40 000	40 000
NO. 13	148-112	144 000	40 000	40 000
NO. 14	148-112	144 000	40 000	40 000
NO. 15	148-112	144 000	40 000	40 000
NO. 16	148-112	144 000	40 000	40 000
NO. 17	148-112	144 000	40 000	40 000
NO. 18	148-112	144 000	40 000	40 000
NO. 19	148-112	144 000	40 000	40 000
NO. 20	148-112	144 000	40 000	40 000
NO. 21	148-112	144 000	40 000	40 000
NO. 22	148-112	144 000	40 000	40 000
NO. 23	148-112	144 000	40 000	40 000
NO. 24	148-112	144 000	40 000	40 000
NO. 25	148-112	144 000	40 000	40 000
NO. 26	148-112	144 000	40 000	40 000
NO. 27	148-112	144 000	40 000	40 000
NO. 28	148-112	144 000	40 000	40 000
NO. 29	148-112	144 000	40 000	40 000
NO. 30	148-112	144 000	40 000	40 000
NO. 31	148-112	144 000	40 000	40 000
NO. 32	148-112	144 000	40 000	40 000
NO. 33	148-112	144 000	40 000	40 000
NO. 34	148-112	144 000	40 000	40 000
NO. 35	148-112	144 000	40 000	40 000
NO. 36	148-112	144 000	40 000	40 000
NO. 37	148-112	144 000	40 000	40 000
NO. 38	148-112	144 000	40 000	40 000
NO. 39	148-112	144 000	40 000	40 000
NO. 40	148-112	144 000	40 000	40 000
NO. 41	148-112	144 000	40 000	40 000
NO. 42	148-112	144 000	40 000	40 000
NO. 43	148-112	144 000	40 000	40 000
NO. 44	148-112	144 000	40 000	40 000
NO. 45	148-112	144 000	40 000	40 000
NO. 46	148-112	144 000	40 000	40 000
NO. 47	148-112	144 000	40 000	40 000
NO. 48	148-112	144 000	40 000	40 000
NO. 49	148-112	144 000	40 000	40 000
NO. 50	148-112	144 000	40 000	40 000
NO. 51	148-112	144 000	40 000	40 000
NO. 52	148-112	144 000	40 000	40 000
NO. 53	148-112	144 000	40 000	40 000
NO. 54	148-112	144 000	40 000	40 000
NO. 55	148-112	144 000	40 000	40 000
NO. 56	148-112	144 000	40 000	40 000
NO. 57	148-112	144 000	40 000	40 000
NO. 58	148-112	144 000	40 000	40 000
NO. 59	148-112	144 000	40 000	40 000
NO. 60	148-112	144 000	40 000	40 000
NO. 61	148-112	144 000	40 000	40 000
NO. 62	148-112	144 000	40 000	40 000
NO. 63	148-112	144 000	40 000	40 000
NO. 64	148-112	144 000	40 000	40 000
NO. 65	148-112	144 000	40 000	40 000
NO. 66	148-112	144 000	40 000	40 000
NO. 67	148-112	144 000	40 000	40 000
NO. 68	148-112	144 000	40 000	40 000
NO. 69	148-112	144 000	40 000	40 000
NO. 70	148-112	144 000	40 000	40 000
NO. 71	148-112	144 000	40 000	40 000
NO. 72	148-112	144 000	40 000	40 000
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CAPACITY OF 100 TANK				
NAME OF TANK	CREW	APPROX. H.M.	100 TANK	PERCENTAGE
NO. 100 TANK	42 45	8 20	16 44	45.45
N° 2		5 20	5 30	45.71
TOTAL		25 01	2 90	

THROUGH THE COURTESY OF
TAIYO FISHING CO. TOKYO, JAPAN

under the provisions of the SCAP directive. Table 4 shows the classification of shipboard personnel by activity and number.

Table 4 - Personnel Aboard the Mothership, Tenyo Maru No. 2		
<u>Ship's Complement</u>		
Total - 82		
<u>Deck Department</u>	<u>Steward's Department</u>	<u>Engine Department</u>
Captain	13 cooks, cook helpers,	Chief engineer
5 mates	mess boys	6 assistant engineers
20 able-bodied seamen		26 firemen, oilers, water
3 radio operators	<u>Medical Department</u>	tenders, wipers
	Ship's doctor	2 refrigeration engineers
	Medical assistant	1 refrigeration assistant
* * * * *		
<u>Company Personnel</u>		<u>Observers and Others</u>
Total - 83	*	Total - 6
General Manager	*	SCAP representative
2 assistant managers	*	Representative, High Commissioner
Interpreter	*	of the Trust Territories
25 deck workers	*	2 Japanese Government inspectors
44 cold storage workers	*	Japanese biologist
3 office workers	*	Japanese news reporter
5 workers assigned to Steward's Dept.	*	
1 worker assigned to Medical Dept.	*	
Ship repair specialist	*	

General Supervision: The general manager was in charge of all work connected with the handling, processing, and freezing of fish aboard the mothership. He was also responsible for conducting business with the fishermen. The actual performance of these duties was largely delegated to two assistants. One assistant manager took charge of deck operations, and the other served as a liaison man between the management and the fishermen. Control over the movements of the mothership, and consequently of the expedition as a whole, was also exercised by the general manager, subject to the approval of Japanese Government representatives aboard.

Unloading and Servicing of Catcher Boats: The mothership did not call upon the deployed catchers to pick up fish. Instead, an unloading schedule was set up based upon the freezing capacity of the mothership whereby two or three vessels returned daily to discharge their catches. This system of rotation allowed the catchers to stay out from seven to eight days per trip. Quite frequently, however, it was impossible to unload the vessels immediately because of the lack of freezer space or breakdowns in the refrigeration equipment. This, coupled with the fact that only one vessel could be unloaded at a time, often resulted in a backlog of vessels. When this happened an added strain was placed upon the mothership workers and the catcher fishermen were dissatisfied because of the unnecessary loss of valuable fishing time. Catchers sometimes had to wait as long as 24 hours before they were able to tie up to the mothership. The fishermen felt that a more realistic and flexible timetable could have been maintained by scheduling the catchers ac-

cording to the ability of the mothership to process fish at a given time, and by notifying the catchers in advance of any revisions in their unloading date necessitated by break-downs or other emergencies.

The mothership generally laid broadside to the prevailing swell to afford the catchers a lee for moorage. Fishing vessels could have been handled on the weather side of the mothership but only with considerable difficulty. Thus, transfer operations were restricted to the leeward side of the mothership.

The catchers were made fast parallel to the mothership by hawsers fore and aft and a breast line of wire cable; no mooring booms were used (Figure 13). The danger of damaging the catchers through their bumping against the side of the mothership was reduced by the use of two or three large fenders made of bamboo strips or rubber tires placed around a core of wooden logs.

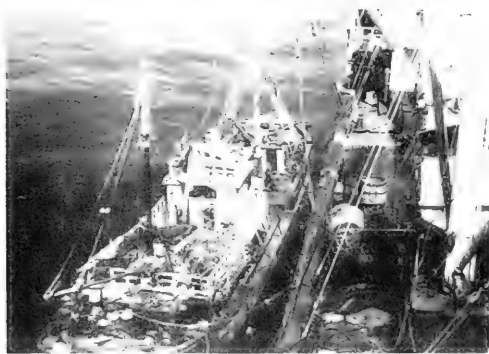


FIGURE 13 - A CATCHER BOAT TIED UP TO THE MOTHERSHIP.

The yard-and-stay method was used to transfer fish from the catcher. Since the catchers were generally moored on the port side, the after boom of pair masts No. 3, port, was swung outboard so that the main hoisting cable would drop directly on the deck of the catcher, forward of the bridge where the fish hatches are located. The winch of either the after boom of pair masts No. 3, starboard, or the forward boom of pair masts No. 3, starboard, was used in tandem with that of the port boom and served to swing the fish inboard after they were hoisted clear of the catcher. Both booms remained immobile during the transfer operations.

The ends of the two winch cables were shackled to a short length of chain fitted with an open cargo hook. Two slings of 2" diameter rope were attached to the hook. When ready to unload, the slings were lowered on to the deck of the catcher or, whenever possible, directly into the fish hatch. Small loops of stout cord or rope fitted beforehand around the tails of individual fish were then hooked on to the slings (see cover photograph). At a signal from a man supervising the work from the side of the mothership, the fish were lifted from the catcher and deposited on deck of the mothership. Although far from efficient, it was possible to unload about a dozen or so large tunas at a time by this method and at a pace fast enough to keep the processing crews busy. The rate of unloading was governed by the speed with which fish could be handled and processed, and usually averaged from 5 to 6 metric tons of fish per hour of uninterrupted work.

Immediately after unloading fish and replenishing its provisions, fuel, water, and bait, the catcher was moved forward beneath the ice crusher. Because of the proximity of the crusher to the unloading area, the catcher taking on ice prevented another vessel from tying up to the mothership. A catcher had to be completely serviced before others could be handled. Proper planning in the installation of the ice crusher would have, therefore, increased the efficiency of mothership operations.

Since ice could not be manufactured aboard the mothership, over 2,000 tons of block ice were brought in the cold-storage holds to the fishing grounds. In supply-

ing a catcher with ice, 200-pound blocks were removed from the lower hold through the hatch next to the base of the ice crusher and lifted by winch and tongs to the bridge deck. On the bridge deck, the blocks were broken in half and fed into the rotary crusher, which was capable of crushing a ton of ice every $3\frac{1}{2}$ to 4 minutes. The crushed ice passed through a metal chute into a large canvas hose, the opening of which was guided by the fishermen below so that the ice would flow directly into the catcher's fish holds. The load of ice taken for a single trip varied from 15-20 tons for catchers without refrigeration systems, and from 5-10 tons for those with a means of maintaining low temperatures in the holds.

Handling and Processing of Fish: The various operations connected with the processing of fish for freezing aboard the mothership were confined to the weather deck aft of the bridge (Figure 14). Most of this working area, which extended over 2,500 square feet or more of open space, was covered with overhead canvas tarpaulins to protect the workers and fish from the weather and to prevent diffusion of light when working at night. Deck space forward of the bridge to the forecabin was utilized only as a storage area. Figure 15 shows the general lay-out of the main deck and the manner in which fish were routed for processing.

As soon as the fish were deposited on deck, they were washed with salt water before being separated by species and taken to the scales for grading and weighing. Catcher fishermen not engaged in unloading usually assisted the three or four mothership workers in hauling the fish to weighing stations and loading them on the scales. Fish pews were used to move fish around and the common practice of indiscriminately hooking fish with pews frequently resulted in lower grading and unnecessary wastage of fish.

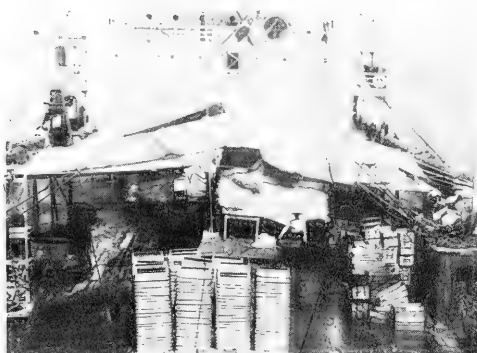
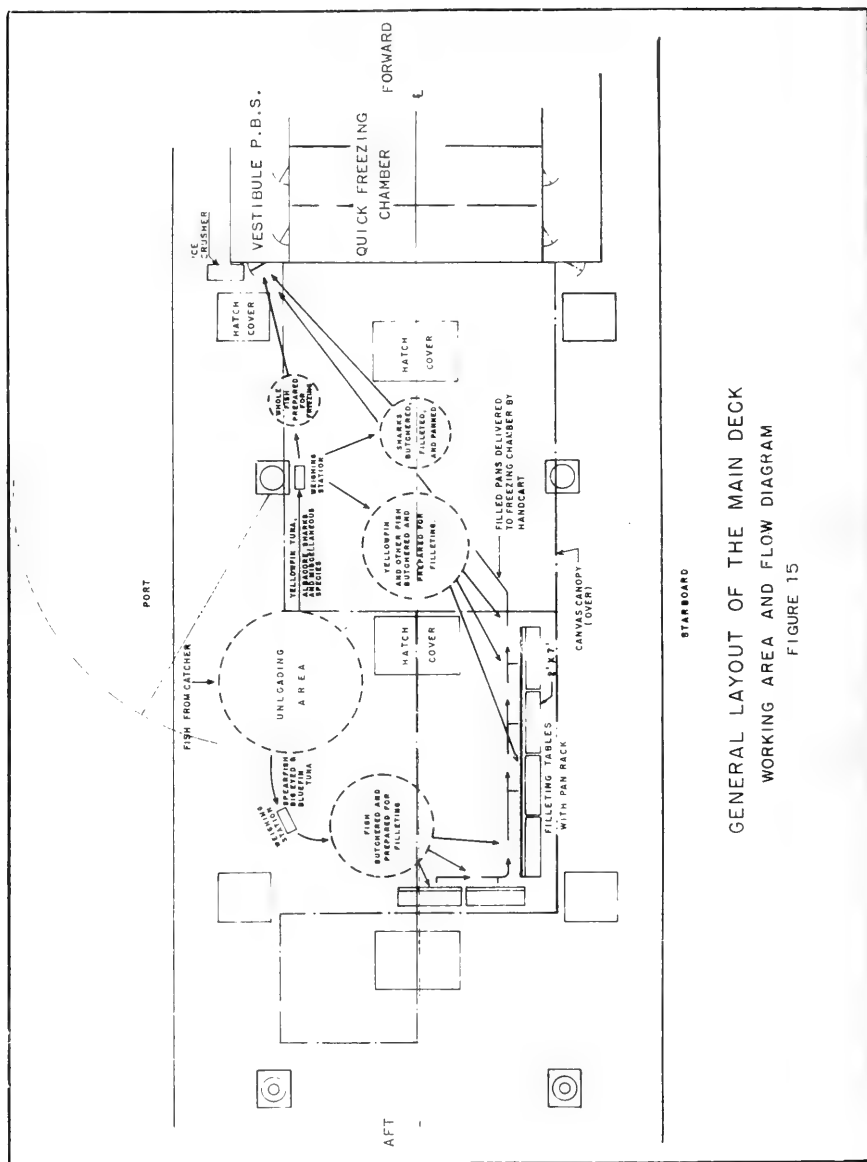


FIGURE 14 - LOOKING AFT TOWARDS THE WORKING AREA ABOARD THE MOTHERSHIP. PANS IN THE FOREGROUND ARE FOR HOLDING FILLETS.

Two weighing stations were set up, one fore and one aft of the unloading area. The after station, being closer to the filleting tables, was used to weigh big-eyed tuna, occasional bluefin tuna, and the various species of spearfishes. The forward weighing station, because of its proximity to the freezing chamber, handled fish suitable for freezing in the round, such as yellowfin, albacore, shark, and miscellaneous species of fish.

Weighing at both stations was done by means of a 500-kilogram (1,100-pound) platform scale. A wooden platform placed on the scales made it possible to weigh several fish at a time. The platform, however, was not long enough for the larger marlins, which had to be sectioned prior to weighing. Records of weights, grade, and species were kept by a company man and also by a fisherman from the catcher being unloaded.

The condition of fish delivered to the mothership was generally good with very little spoilage because the fishermen made liberal use of their ice and the trips were of short duration. Salable fish was bought by the mothership management at a price which differed for species and quality of fish. Yellowfin and albacore commanded the highest prices because of their export value. Sharks brought the lowest



GENERAL LAYOUT OF THE MAIN DECK
WORKING AREA AND FLOW DIAGRAM
FIGURE 15

price. Quality was related to the general appearance of the fish, texture, firmness, and color of meat, and this was determined by organoleptic methods at the time of weighing by a company man. Yellowfin tuna were arbitrarily graded by condition into four and sometimes five grades; big-eyed tuna into three or four; albacore into two; marlin and other fish into two or three grades. Proportionally lower prices were paid for the poorer grades of fish. Shark prices did not change with species or quality.

Yellowfin tuna, albacore, and some of the smaller tunas were not gutted at sea like other species. At the company's request, however, gills of all yellowfin tuna were removed immediately after capture because it was believed that whole yellowfin so treated would be more acceptable for export. A monetary allowance was given the fishermen to compensate them for this loss of weight.

Shark and tuna livers were saved by all of the catcher boats and were either kept aboard each catcher or were transferred to the mothership for freezing and storage. By long-standing practice, the revenue derived from livers is divided among the fishermen. Livers derived from uneviscerated fish purchased by the company, however, did not revert to the fishermen but became company property.

After weighing, yellowfin tuna, albacore, wahoo, and small tunas suitable for freezing whole were thoroughly washed and scrubbed before being passed to the freezing chamber. Yellowfin tuna were checked for gill removal and for external wounds or abrasions which could result in their rejection when exported. Furthermore, for ease of handling, the long second dorsal and anal fins which are characteristic of mature yellowfin tuna were chopped off close to the base.

All tuna exceeding 11 inches in thickness and those not meeting quality standards for freezing as whole fish were prepared for filleting in the area immediately adjacent to the forward weighing station. Here, on the wooden deck, the fish were beheaded with cleavers, cleaned, and washed before being taken aft to the filleting tables. Except for the removal of the livers, no effort was made to utilize the viscera and heads which were thrown overboard.

Spearfish and big-eyed tuna were similarly processed for filleting near the after weighing station. Big-eyed tuna, weighing less than 10 lbs. and sections of the smaller sailfish were sometimes frozen whole depending upon the availability of shelf space in the freezers.

Sharks were cut into sections after weighing and pan-frozen for later sale to Japanese fish-cake manufacturers. The dorsal, pectoral, and caudal fins of these fish, highly esteemed by Orientals when dried, were also retained as a byproduct and frozen.

The six filleting tables were 7 feet long by 2 feet wide, with metal grates in front to serve as pan racks. Those on the starboard, usually the weather side, were sheltered by a backdrop of bamboo curtains in addition to the overhead canvas. A 200-watt lamp suspended over each table provided very poor light for night work, but the filleting tables were well lighted as compared to other areas of the deck where hazardous work, such as butchering, was often conducted in semidarkness.

The techniques used to fillet fish were essentially the same for all filleters and a skilled worker was able to dispose of a 60- to 75-pound fish in about 4 minutes on the average (Figure 16). The trunk of the fish was first slashed around the caudal peduncle anterior to the keel with a heavy keen-edged knife. The blade was then passed along one side of the backbone, ventrally and dorsally. Cutting down through

and along the lateral line permitted removal of two loins. The remaining side of the fish was next separated from the backbone and halved. The four loins were then trimmed to fit a standard freezing pan measuring 23" x 13" x 4 $\frac{3}{4}$ ". These pans were capable of holding from two to three loins or about 50 pounds of fish each. The small

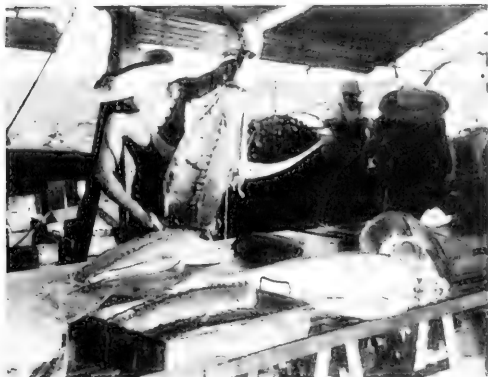


FIGURE 16 - A WORKER FILLETING A YELLOWFIN TUNA.

left-over pieces were saved and placed in a separate pan for freezing. Spearfish sections were handled in the same manner as the tuna sections. The freezing pans were filled by a crew of three men who also kept the filleters supplied with fish. Pans when filled were marked as containing either first- or second-grade fillets, although the fish may have been purchased at lower grades. The filled pans are then loaded on push carts and wheeled to the receiving door of the freezing room.

Often, the filleters were not able to keep up with the flow of fish from the butchers, in which case the fish were piled up on deck until they could be handled. The procedure was dispensed with when it was determined that the time elapsing before the fish could be filleted was usually not long enough to materially affect the condition of the fish.

Freezing and Storage of Fish: A single-stage, direct-expansion ammonia system was used to freeze fish aboard the mothership. Four vertical compressors of Japanese manufacture were in operation, with a total rated capacity of 250 metric tons. Two compressors, one of 100 tons and one of 50 tons, were used for the freezers. The remaining two compressors formed part of the brine-cooling system which controlled temperatures in the cold-storage holds. Freezer temperatures were brought down to a minimum by the use of -50° C. ammonia; head pressure during normal operation was held at about 215 pounds per square inch.

The below-deck quick-freeze rooms, port and starboard, were not used mainly because of the inconvenience of supplying fish to these two chambers. The freezing of whole fish and fillets was, therefore, conducted in the large freezing chamber on the main deck. This chamber was divided into six freezing compartments connected at each end by an outer vestibule, or preparation room. Each compartment was provided with two banks of ammonia coils which formed nine shelves on a side. Each shelf was 7 pipes wide and each pipe 2 inches in diameter. Removable galvanized plates were placed on the shelves to increase the area of contact with the fish. The six upper shelves were for freezing pan fish and had a space of seven inches between coils. The three lower shelves were for whole fish and measured 11 inches apart. Each bank of shelves held 120 pans of fish (approximately 50 pounds per pan) and 72 whole fish weighing from 60-70 pounds apiece. The total freezing capacity for all six compartments was about 65 metric tons of fish during a 24-hour period.

Whole and filleted fish were passed through the door of the port vestibule and guided along portside metal grates, installed along the corridor, to a compartment. A similar device was used in the starboard vestibule for removing frozen fish. As the

compartment was filled to capacity, grate extensions were removed, the doors closed, and temperatures were lowered. Often, it was not possible to completely fill a compartment in which case, if it were known that more fish would become available in a few hours, the usual practice was to postpone freezing the partially-filled compartment.

Fish were frozen in at least 24 hours at minimum temperatures varying between -20° and -30° C. Temperatures were taken twice daily by means of a thermometer inserted through a hole in the compartment wall above the door adjoining the starboard vestibule. To test whether whole fish were frozen satisfactorily, cores were taken from a sample fish of each lot and examined. A thermometer was inserted into the center of the body after removal of the core, and if the internal temperature read below 0° C., the fish was considered to be thoroughly frozen.



FIGURE 17 - WHOLE YELLOWFIN TUNA FROZEN AND STACKED IN A COLD STORAGE HOLD.

Frozen fillets were given a preliminary fresh-water glaze and removed from pans in the starboard vestibule. The pans were then passed out through the doorway to the main deck for cleaning and filling. The blocks of frozen fish were chuted below for a final glaze and packing into cardboard boxes for storage. Whole fish were individually glazed below and stacked in the main cold-storage holds (Figure 17) rather than in the side wings which were for boxed fillets.

Working Conditions: By United States standards there was considerable room for improvement in efficiency of operations which would have resulted in time and labor savings. It was apparent, however, that the mothership management was not interested in reducing the work through operational planning and the improvement of existing equipment because of the cheap, ample supply of available labor. Simple conveyor systems, for example, would have speeded up deck operations considerably. Lacking these and other labor-saving devices, workers assigned to the handling and processing of fish were subjected to rigorous working conditions and were on call 24 hours a day. These men were seldom able to rest for more than eight hours a day during most of the season and then for only two- or three-hour intervals instead of one continuous period. The ship's crew and those working in the freezer and cold-storage holds were more fortunate in that they worked on a shift basis. In relation to the work performed, all workers were poorly paid. A skilled filleter received as little as \$40 per month beside room and board. Production was adversely affected towards the end of the season because of the cumulative effects of hard labor, inadequate rest, and the lack of monetary incentives which visibly affected the workers' efficiency and morale.

Production: According to statistical data provided by the Taiyo Fishing Company, approximately 6,236,000 pounds of final products, not including specialty items, such as shark fins and livers, were obtained from about 7,683,000 pounds of raw fish consigned to the mothership during the season. This represents a utilization of over 80 percent of all fish by weight, but as mentioned earlier, many of these fish were already gutted or gilled when delivered to the mothership. The leading product by

Table 5 - Products Produced Aboard the Mothership^{1/}

Type of Product	Species	Quantity of Products Produced lbs.
Whole, frozen	Tuna	2,375,607
Fillets, frozen ..	Tuna	1,670,798
	Marlin	1,224,918
	Shark	575,275
	Other ^{2/}	172,949
Iced fish	Tuna	113,616
	Marlin	7,268
Livers	Tuna	17,007
	Shark	41,086
Other ^{3/}	-	37,452
Total		6,235,976

^{1/}REPORTED FIGURES.^{2/}INCLUDES WAHOO AND SMALL TUNA FROZEN WHOLE OR WITH HEADS REMOVED.^{3/}MOSTLY SHARK FINS.

weight was frozen fillets, but the most valuable was the 2,375,000 pounds of whole frozen fish, almost entirely yellowfin tuna. ^{3/} (The itemized production is presented in Table 5.) Although most of these fish products remained aboard the mothership until her return to Tokyo, some 120,000 pounds of fresh yellowfin tuna, big-eyed tuna, and black marlin were picked up and transported back to Japan by a small refrigerated carrier vessel during the middle of August to take advantage of the high prices then prevailing in that market. Catches made at the season's end and brought back to port

by the individual catchers were also sold as fresh fish.

ACKNOWLEDGEMENT

This study was made possible by the High Commissioner of the Trust Territory of the Pacific Islands, the Supreme Commander for the Allied Powers, and the Japanese Government. Credit must be extended to the staff of the Fisheries Division, Natural Resources Section, General Headquarters, Supreme Commander for the Allied Powers; and to the Taiyo Fishing Company for making their services and facilities available. The generous assistance of personnel of the Nankai Fisheries Experiment Station and the Japanese Fishery Agency is also acknowledged. Illustrations used in this report were prepared by Miss Alice Hunt, formerly of the Pacific Oceanic Fishery Investigations, U. S. Fish and Wildlife Service, Honolulu, Hawaii.

^{3/}UPON RETURN OF THE EXPEDITION TO JAPAN, NEARLY ALL OF THE WHOLE FROZEN FISH WAS SOLD AND EXPORTED TO THE UNITED STATES.

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1950--AN UNUSUAL HADDOCK YEAR ON GEORGES BANK

By Howard A. Schuck* and John R. Clark*

The haddock catch from Georges Bank in 1950 was one of the most unusual in the history of that Bank's fishery. This was due to very heavy landings of scrod, particularly during the summer, when some of the most exceptional trips on record

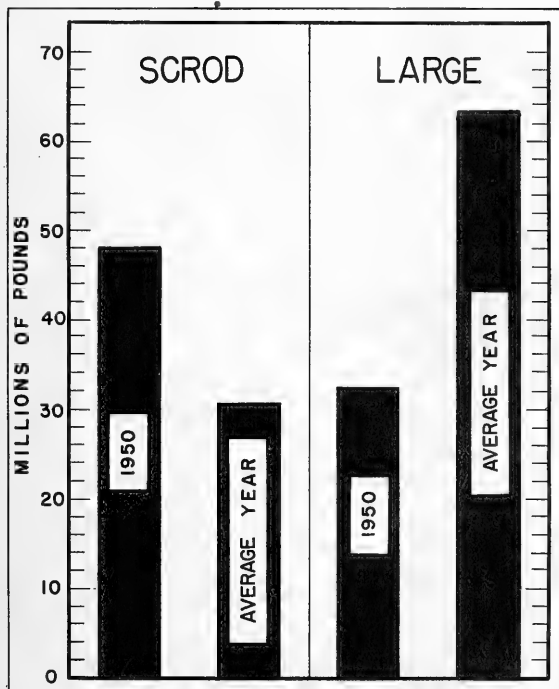


FIGURE 1 - THE POUNDS OF SCROD AND LARGE HADDOCK LANDED IN 1950 AS COMPARED WITH THE AVERAGE YEAR.

dock-year^{2/} catch from Georges Bank was composed of about 48,100,000 pounds^{2/} of scrod and only 32,400,000 pounds of large, a ratio of 3:2, whereas in the average year^{4/} the landings have been about 31,000,000 pounds of scrod and 63,000,000 pounds of large, or a ratio of 1:2.

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^{1/}AS DEFINED BY THE NEW ENGLAND FISH EXCHANGE, SCROD ARE HADDOCK OF 1-1/2 TO 2-1/2 POUNDS, LARGE HADDOCK ARE OVER 2-1/2 POUNDS.

^{2/}THE HADDOCK YEAR, I.E., FEBRUARY THROUGH JANUARY, IS DIFFERENT FROM A CALENDAR YEAR BY ONE MONTH. QUANTITIES FOR THE LAST THREE MONTHS OF THE HADDOCK YEAR 1950 WERE PARTIALLY ESTIMATED.

^{3/}DRAWN WEIGHT.

^{4/}ALL AVERAGE DATA ARE FOR THE PERIOD 1931-48.

were landed at the Boston Fish Pier. For instance, on July 11 one vessel hailed 100,000 pounds of scrod haddock and only 11,000 pounds of large haddock;^{1/} on August 15 another hailed 114,000 pounds of scrod and only 4,000 pounds of large; on August 21 a third hailed 115,000 pounds of scrod and 5,000 pounds of large. Twenty-four of these unusual trips hailed a total of 2,073,000 pounds of scrod and only 106,000 pounds of large--a ratio of 20 pounds of scrod to 1 of large.

As a result of a continuing study of the haddock fishery by the U. S. Fish and Wildlife Service, certain facts concerning the 1950 catch are available.

This is the first year on record, for instance, that poundages of scrod landed have surpassed poundages of large haddock. The 1950 had-

The numbers of fish landed show the great abundance of scrod more clearly than do the pounds landed. Of a total of 43,500,000 individual fish landed from Georges Bank in 1950, 34,300,000 were scrod and only 9,200,000 were large, or almost twice the number of scrod (18,200,000) and half the number of large (18,700,000) as are landed in the average year.

The sizes of haddock landed in 1950 differed considerably from the sizes landed in the average year. Figure 2 shows how the sizes in 1950 deviated from the average.

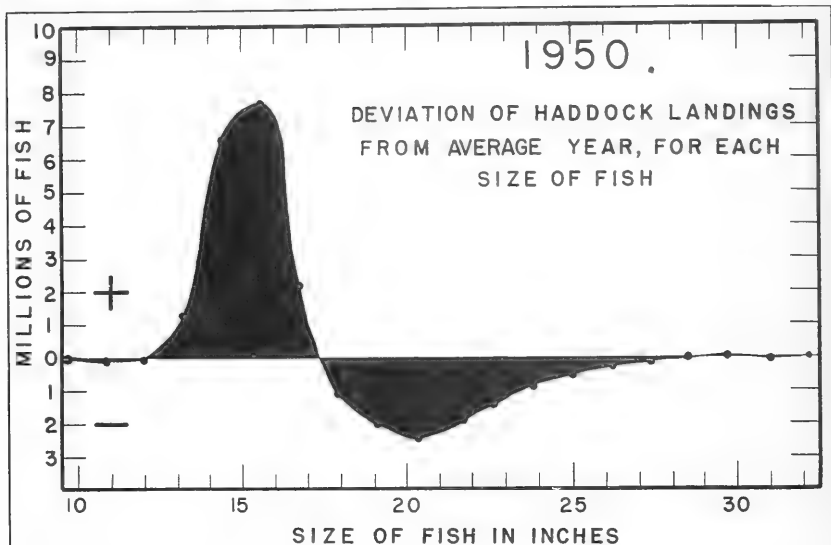


FIGURE 2 - DEVIATION OF 1950 HADDOCK LANDINGS FROM THE AVERAGE YEAR, FOR EACH SIZE OF FISH.

The horizontal line at zero on the scale represents the norm. The numbers of each size of fish that exceeded the number for the average year are plotted above the zero line (+) and the number of each size that was less than the number for the average year are plotted below the zero line (-). For example, in 1950 there were about 1 million more fish of 13 inches than in the average year; about $6\frac{1}{2}$ million more fish of $14\frac{1}{2}$ inches; but some 2 million less fish of 19 inches than average. In brief, there were many millions more fish under 17 inches and many millions less fish over 17 inches than have been landed in the average year.

Most fish under 17 inches are smaller than the established lower limit for scrod.^{2/} More than 20,000,000 of these "undersized" haddock were landed from Georges Bank in 1950. In other words, almost half the total numbers caught were "undersized." In the average year less than 5,000,000 undersized haddock have been landed, and never before have more than 10,300,000 fish been landed.

The heavy catches of scrod lowered the individual average weight of all haddock landed in 1950 to only 1.85 pounds. The average weight has never before been below 2.27 pounds, and the average weight for the whole 18-year period has been 2.55 pounds.

^{2/}SCROD, AS DEFINED BY THE NEW ENGLAND FISH EXCHANGE, INCLUDES HADDOCK OF 1-1/2 - 2-1/2 POUNDS (GUTTED WEIGHT). A 17-INCH HADDOCK AVERAGES SLIGHTLY OVER 1-1/2 POUNDS.

We have been able to assess the ages of haddock landed by examination of the scales collected at the Boston Fish Pier (Figure 3). Of all scrod landed from Georges Bank in 1950, 85 percent were 2-year-olds. In the average year only 47



FIGURE 3 - OBTAINING SCALES FROM HADDOCK AT THE BOSTON FISH PIER FOR AGE DETERMINATION.

percent of the scrod landed are of that age. It is apparent that the 1948 spawning (which produced these 2-year-olds) was one of the most successful, if not the most successful, in the history of the fishery. This year-class in its first two years has already contributed 29,700,000 fish to the landings, almost three times the number of fish contributed in a similar period by the average year-class.

Of all other year-classes to enter the fishery since 1931, three were really outstanding. The large 1936 brood was primarily responsible for increased catches of haddock in the late 1930's, and the successful 1939 and 1940 broods provided good catches of haddock in the early 1940's. These three year-classes (1936, 1939, and 1940) all made greater-than-average contributions to the landings as 2-year-olds, yielding, respectively, about 200, 210, and 130 percent more two's than the average.

Although large catches have already been taken from the 1948-year class, it should continue to make large contributions to the fishery in the next few years. The effect, however, will now become less pronounced on catches of scrod. Thus, we can predict that the catches of large haddock will be somewhat greater in the next two or three years. Future catches of scrod, of course, will depend on the success of subsequent spawnings.





The following is a list of projects carried out by the Technological Section of the Service's Branch of Commercial Fisheries during the fiscal year 1951, beginning July 1, 1950, and ending June 30, 1951. Included is a very brief summary of the progress made on each project. More complete details ~~have~~ already have been published on certain projects and reports are being or will be prepared on the remaining.

NUTRITION:

1. Effect of low and high temperatures on chemical properties of proteins--Relationship between water and fish proteins: The effect of grinding fish has been investigated as regards its relationship to the water-binding property of fish proteins. It has been shown that the water-binding property is at a minimum for meat of fish which has been coarsely ground, and as the particle size decreases the water-binding property increases. A start has been made on investigation of the effect of temperature of fish on its water-binding property.

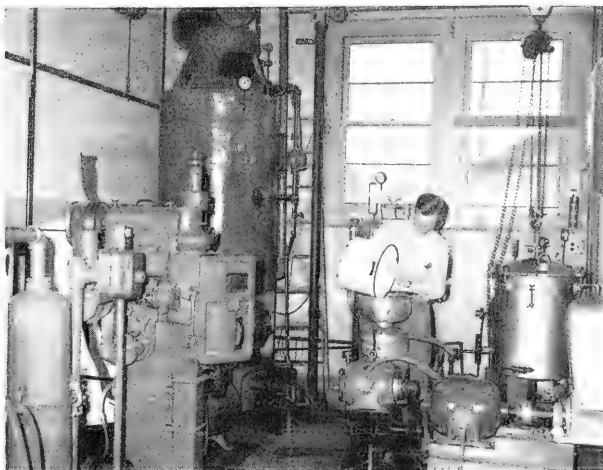
2. Utilization of salmon cannery waste for hatchery food:

- (a) A chemical method for preservation of fish eggs for hatchery food was developed by a Service laboratory. A commercial-scale test (involving 10,000 pounds of salmon eggs) of the method will be made during the coming fishing season in August.
- (b) Methods for collection and shipping frozen salmon viscera from Alaska to fish hatcheries in the U. S. will be tested on a commercial scale in August.
- (c) Analyses have been completed for niacin, biotin, riboflavin, vitamin B₁₂, and proximate composition on the experimental diets used by Federal and State fish hatcheries, and preliminary reports prepared. A rough-draft report on the analytical procedures developed for vitamin assays was completed.

1/MORE DETAILED INFORMATION ON ANY OF THESE PROJECTS MAY BE OBTAINED BY THE FISHERY AND ALLIED INDUSTRIES BY WRITING DIRECTLY TO THE BRANCH OF COMMERCIAL FISHERIES, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON 25, D. C.; TO THE SERVICE'S LABORATORIES; OR BY CONSULTING WITH MEMBERS OF THE TECHNOLOGICAL SECTION.

3. Clam processing methods and clam toxicity survey: Additional packs of whole and minced canned butter clams were prepared. A small number

of samples remain for extracting for toxicity tests. As soon as additional test animals are obtained the toxicity tests will be completed and the data tabulated. A second report on the seasonal variations in toxicity of butter clams from selected Alaskan beaches was prepared covering the period from September 1949 to August 1950. Results also indicate that transplanted highly toxic clams to a



PORTION OF PILOT PLANT OF THE SERVICE'S TECHNOLOGICAL LABORATORY AT KETCHIKAN, ALASKA, SHOWING CAN SEALER, BOILER, CENTRIFUGE, AND STEAM-PROCESSING EQUIPMENT.

beach of low toxicity do not lose toxin at an appreciable rate during a year's period despite the fact that indigenous clams remained at low toxicity throughout the period. Clams transplanted from a low toxic area to a highly toxic area showed a slight but significant increase in toxicity during the year.

4. Study to determine the hemopoietic (blood-producing) value of fish: (Cooperative project with University of Maryland.) Human feeding tests have been completed. The data are now being summarized.

5. Feeding studies with gum extracted from Irish moss: Long duration feeding tests on Irish moss extractives were initiated using rats and mice to determine the wholesomeness of these products.

6. Investigation of the toughening of frozen blue-crab meat: (Project sponsored by The Refrigeration Research Foundation in cooperation with the U. S. Fish and Wildlife Service and University of Maryland.) Data indicate that there is considerable variation in pH of freshly cooked crab meat and that there seems to be a trend toward a more alkaline pH during frozen storage. The cooked meat maintains an average low level of respiration during frozen storage of approximately one quarter as great as the fresh uncooked meat. Attempts are being made to enhance the respiration of freshly cooked crab meat in order to identify the enzyme which may be responsible for changes in texture.

7. Determination of food value of fishery products as prepared for serving: The report was completed and submitted for consideration for publication. It contains data on the proximate composition and caloric value of a number of prepared fish dishes.

REFRIGERATION:

1. Freezing fish at sea, defrosting, filleting, and refreezing the fillets: To test the proposed method of freezing fish at sea on a commercial scale, a surplus trawler was obtained by transfer from another Federal agency, and it is now being reconditioned and equipped with fish-handling and refrigeration equipment. The first commercial trial is planned for June 1951.

2. Study of fresh and frozen oysters: Darkening of oysters during frozen storage was not prevented or appreciably retarded by treating with ascorbic acid. Commercially-packed frozen oysters showed insignificant pH changes during storage. A report was submitted for publication.

3. Studies on methods of handling frozen salmon for canning: Use of frozen salmon for canning produces a slightly inferior canned product, even if the frozen fish were handled and stored under the present best conditions. A preliminary report was published.

4. Freezing pink salmon: Storage life of frozen pink salmon may be extended to 10 months or more by use of improved packaging methods, lower storage temperatures, or suitable antioxidant dips.

5. Freezing and storing Alaska shrimp and Dungeness crab: Preliminary tests indicate the quality of frozen Alaska shrimp is affected greatly by the methods of precooking and packaging. Frozen cooked crab meat in the shell stored at 0° F. was unmarketable after 60 to 90 days.

6. Palatability and cold storage life of various species of Pacific Coast rockfishes: Sebastes alutus (long-jawed rockfish) is far superior in cold storage life and slightly superior in initial palatability to other common species of rockfish. S. aluuus is slightly superior to Sebastes marinus (Atlantic Coast ocean perch or rosefish) in cold storage life but very slightly inferior in initial palatability.

7. Preparation of a manual on the refrigeration of fish: The outline was prepared and literature references are being reviewed and assembled.

PROCESSING AND PRESERVATION:

1. Canning of "little tuna": Test packs indicate it is possible to prepare a canned product of commercial quality. A report on the project will be presented at the annual convention of the Institute of Food Technologists, June 1951.

2. Evaluation of the antibiotic "subtilin" as a preservative for fishery products: Application of subtilin to preservation of fresh cooked crab meat showed little promise. This fact coupled with adverse criticisms regarding use of antibiotics in foods by other Federal agencies and certain trade associations prompted discontinuance of this project.

3. Comparison of canned gill net-caught albacore tuna with the troll-caught fish: The tuna were canned in a custom cannery where certain differences existed between the procedure used and that ordinarily employed commercially. As a result the product was not well packed and considerable scorch was present. Therefore, no definite conclusion could be drawn from the test.

SANITATION AND BACTERIOLOGY:

1. Bacteriological survey of the preparation of crab meat: Limitation of personnel and funds precluded initiation of this study.
2. Growth of pink yeast (isolated from oysters) at below freezing temperatures: Limitation of personnel and funds precluded additional studies on cultural characteristics and the physiology of the pink-yeast organisms.

ANALYSIS AND COMPOSITION:

1. Chemical composition of fish, (A) Menhaden: The literature survey has been substantially completed.
2. Cooperative work with the Association of Official Agriculture Chemists on the determination of oil in fish meal: Report presented at the meeting of the Association and will be published in the Journal of the Association of Official Agriculture Chemists. Data are presented of preliminary tests using a refluxing method for the determination of fat in fish meal in an attempt to develop a method resulting in more rapid and complete extraction of fat.
3. Correlation of biological and spectrophotometric methods for the determination of vitamin A potencies: Recheck of spectrophotometric assay and bioassay was completed and data are being summarized.

BYPRODUCTS:

1. Vitamin content, particularly vitamin B₁₂ of fishery byproducts: Analytical and bioassay methods for vitamin B₁₂ were studied. An exhaustive series of more than 200 samples of fish meal and other byproducts was collected and work is in progress on the assay for vitamin B₁₂.
2. Utilization of salmon cannery waste for animal food: (Cooperative tests with the Petersburg, Alaska, experimental fur farm.) Tests indicate that frozen salmon cannery waste can be used as the main component in an inexpensive efficient diet for fur farm animals.
3. Preparation of a manual on the fish meal and oil industry: Work on this project was postponed and personnel assigned to another more pressing project.





TRENDS AND DEVELOPMENTS

Additions to the Fleet of U. S. Fishing Vessels

Fifty-two vessels of 5 net tons and over received their first documents as fishing craft during March 1951—6 less than in March 1950. Texas led with 11 vessels, followed by Louisiana with 7 and California with 6 vessels, the Bureau of Customs reports.

During the first three months of 1951, a total of 142 vessels were documented as fishing vessels, the same number as in the first quarter of 1950.

Vessels Obtaining Their First Documents as Fishing Craft, March 1951					
Section	March		3 mos ending with Mar.		Total
	1951	1950	1951	1950	1950
	Number	Number	Number	Number	Number
New England	2	2	5	7	36
Middle Atlantic	6	3	13	5	45
Chesapeake Bay	2	4	4	14	81
South Atlantic	6	12	22	30	153
Gulf	20	17	47	33	167
Pacific Coast	12	15	38	39	231
Great Lakes	-	1	1	3	12
Alaska	3	4	11	11	83
Hawaii	1	-	1	-	4
Total	52	58	142	142	812

NOTE: VESSELS HAVE BEEN ASSIGNED TO THE VARIOUS SECTIONS ON THE BASIS OF THEIR HOME PORT.



Alewife Taken From Lake Michigan

A fish identified as an alewife was recently taken from Lake Michigan off Whitehall, according to an April news release from Michigan's Department of Conservation.

This specimen, which resembles the true herring, is the second one ever recorded by the Department as being taken in Lake Michigan. The alewife, native to north Atlantic coastal waters and in recent years common in Lake Erie, was unknown above Niagara Falls prior to the opening of the Welland canal.

The specimen was over nine inches long. Most of these fish average three to four inches and in Lake Ontario rarely exceed five to six inches. Often used as bait, the marine alewife is marketed as fresh, pickled, and smoked fish.



Alaska Fishery Investigations

HERRING RESOURCES OF ALASKA: Although wage and price agreements are still in the negotiation stage in the Alaska herring fishery, operations in all districts this season seem fairly certain. Preparations have been completed for sampling of the catch.

Calculation of hours of fishing time was completed for all herring seiners' log books returned from the trial run of 1950. The average catch for each district in tons per hour of fishing time follows: Kodiak, 3.6 tons; Prince William Sound, 3.55 tons; and Southeastern, 0.9 tons.

The 1950 age composition for the Kodiak fishery was obtained on completion of the check reading of scales. The dominant year class in the catch was that of 1947 with 52 percent, followed by 1944 with 13 percent. The samples demonstrated that catches made south of Cape Uyak in Shelikof Straits contain many more older individuals than do those made to the north of that point. In 1950 the average age of fish taken on the Bumble Bay grounds was 6 years as compared to an average of 4 years for catches made at Raspberry Cape. Cape Kuliuk, which lies between these two localities, had an average age of $4\frac{1}{2}$ years. A similar situation prevailing in the age composition of the past several years suggests a difference in origin in the populations inhabiting the northern and southern areas of Shelikof Strait, and the possibility of some intermingling of these populations at Cape Kuliuk in the fall months.



Federal Purchases of Fishery Products

FRESH AND FROZEN FISH PURCHASES BY DEPARTMENT OF THE ARMY, APRIL 1951: The Army Quartermaster Corps purchased during April 1951 a total of 2,729,426 pounds of fresh and frozen fishery products for the military feeding of the U. S. Army, Navy, Marine Corps, and Air Force (see table). Compared with the previous month, April purchases increased 13.2 percent in quantity and 37.4 percent in value. Compared with April 1950, this year's purchases for the same month were greater by 174.7 percent in quantity and 159.5 percent in value.

Table 1 - Purchases of Fresh and Frozen Fishery Products by Department of the Army
(April and the First 4 Months, 1951 and 1950)

Q U A N T I T Y				V A L U E			
April		January-April		April		January-April	
1951	1950	1951	1950	1951	1950	1951	1950
lbs.	lbs.	lbs.	lbs.	\$	\$	\$	\$
2,729,426	993,562	8,647,236	3,562,406	1,128,474	434,940	3,616,945	1,622,400

A comparison of the first four months' purchases for 1951 and 1950 shows that there was an increase of 142.7 percent in quantity and 122.9 percent in value for 1951. The Quartermaster Corps purchases of fish during this four-month period were 5 million pounds greater than for the same period of the previous year.



Fishery Biology Notes

CLAM GROWTH IN GULF OF MEXICO TO BE OBSERVED: The U. S. Fish and Wildlife Service's Shellfish Laboratory at Milford, Conn., air-expressed in April several thousand young hard clams or quahogs (Venus mercenaria) in special containers to the Service's Gulf Oyster Investigations at Pensacola, Fla. These clams were grown in winter at the Milford laboratory from fertilized eggs released by specially conditioned parents. Since the setting, the young clams have been kept under continuous observation.

The Gulf Oyster Investigations will observe their growth and behavior under conditions existing in some localities of the Gulf of Mexico. Eventually it may become possible to establish there a fishable clam population.



Freezing-Fish-At Sea Technological Studies

VESSEL "DELAWARE" MAKES SHAKEDOWN CRUISE (Cruise No. 1): The converted trawler Delaware, the Branch of Commercial Fisheries' experimental vessel for freezing-fish-at-sea technological studies in the New England area, left on its shakedown cruise on June 18 and was expected to return about June 26. Operations were to be conducted on New England fishing banks.

The main purpose of the cruise will be to test the performance of the refrigeration machinery. Fish which are taken will be used to test the brine-freezer tank and to develop suitable handling methods for storage of frozen fish. Fishing operations on this cruise will be conducted for only a limited time each day. As each drag is brought aboard, fish will be sorted into sizes and species. Each of the lots so segregated will be divided in half; one half will be gutted and iced for storage in the forward fish hold in the normal New England trawler manner; the second half of each lot will be frozen in the brine-freezer tank and then stored in the refrigerated storage space. The purpose of splitting of the catch is to allow the filleting of portions of each lot at the shore pilot plant for studies on the quality and yield of fish fillets produced by each of the two methods of storage.



Great Lakes Fishery Investigations

LAKE TROUT STOCKS IN LAKE SUPERIOR AT A LOW LEVEL: The stocks of lake trout in Lake Superior are in poor condition to withstand threatened inroads of sea lampreys which have been taken from all parts of this lake and are known to have established spawning runs as far west as Keweenaw Peninsula, the Service's fishery research biologists of the Great Lakes Fishery investigations report.

The combined United States and Canadian production of lake trout averaged 4,325,000 pounds during 1885-1892; 6,236,000 pounds from 1893-1907; and 4,403,000 pounds from 1908-1949. The short-term fluctuations of production during the more recent years give evidence of periodicity in the output of trout in the entire lake. These periodic fluctuations tended to be similar in Michigan and Ontario waters of Lake Superior and suggests that the fishermen exploit a common stock or stocks subject to similar fluctuations.

The indices of abundance or availability as computed from records of the catch of lake trout per unit of fishing effort showed periodic fluctuations similar to those of production. In Michigan waters, the abundance of lake trout, expressed as a percentage of the 1929-1943 mean, stood at 108 in 1929, dropped to 100 in 1931, rose to a 21-year high of 137 in 1934, decreased to 80 in 1940, increased again to 107 in 1944 and then fell to the 21-year low of 65 in 1949.

The distinctly cyclic fluctuations that characterized statistics on production and abundance were much less apparent in the 1929-1949 data on fishing intensity. Over the 6-year period, 1944-1949, fishing intensity expressed as a percentage of the 1929-1943 mean averaged 142; for the most recent 4 years, 1946-1949, the average intensity index was 151.

The failure of production to serve as an indicator of changes in abundance can be attributed to the negative correlation that existed between abundance and fishing intensity. The relationship suggests that fishermen have increased their fishing pressure in order to maintain their production during the recent years of declining abundance. Production in 1949 stood at 106 percent of the 1929-1943 mean, but this level of yield was made possible only by fishing intensity that was 162 percent of average; the abundance index in 1949 was only 65.

Lake trout stocks of the State of Michigan waters of Lake Superior are approaching a dangerously low level considering probable effects of a growing population of sea lampreys and intensified efforts of fishermen to keep production up.

* * * * *

TESTS OF EXPERIMENTAL ELECTRICAL SEA-LAMPREY BARRIERS SUCCESSFUL: Early tests of experimental electrical barriers intended to bar sea lampreys from spawning grounds in streams tributary to the Great Lakes indicate this device will prove both effective and economical, according to the Service's Great Lakes Fishery Investigations.

The Service, assisted by the Cook Electrical Research laboratories of Chicago, Illinois, has blocked successfully the spawning run of the sea lamprey in the Ocqueoc River with as little as $2\frac{1}{2}$ kilowatts of power. The Ocqueoc River, about 90 feet wide, is located near Rogers City, Michigan. Further experimentation is being conducted during the sea lamprey spawning season to refine the procedures and to determine the most suitable structure for practical use in control of this parasite which has all but eliminated the multi-million dollar lake trout fishery in Lakes Huron and Michigan.

Research on sea-lamprey control measures are directed from the Hammond Bay fishery laboratory near the Ocqueoc River.

NOTE: SEE COMMERCIAL FISHERIES REVIEW, AUGUST 1950, P. 15.



Gulf Exploratory Fishery Program

LARGE BROWN-GROOVED SHRIMP LOCATED BY "OREGON" (Cruise No. 8): Unfavorable weather hampered shrimp trawling by the Oregon, the Service's Gulf exploratory fishing vessel, during the first part of Cruise No. 8 in late March and early April, and this cruise was interrupted several times.

During the first part of the cruise (from March 20 to April 8), the Oregon worked west of Pascagoula, chiefly near the continental shelf between the 90th and 92nd meridians. The vessel visited Rockport, Texas, on March 23. During the second part of the cruise (from April 22 through May 8), the Oregon worked off Pensacola, Florida, and visited that port May 23.

Small numbers of very large brown-grooved shrimp were found in the vicinity of latitude 30°00'N. longitude 86°50' W. southeast of Pensacola, in 52 to 68 fathoms, but catches did not exceed 25 pounds per hour. Some of the shrimp were larger than five ounces and special efforts were made to locate heavier concentrations in shallower water. However, drags in this area in less than 52 fathoms produced no shrimp at all. All drags made during Cruise 8 included a relatively high proportion of scrap. Drags with a hundred-foot flat trawl produced over $\frac{1}{2}$ ton of scrap fish per hour in 18 and in 42 fathoms off Pensacola and the proportion of scrap elsewhere appeared to be abnormally high.

Surface-feeding schools of little tuna or similar fish were seen on April 26 southeast of Pascagoula in water depth of about 30 fathoms. This was the first observation of surface schools of large fish by the Oregon this spring. At about the same date increased numbers of the white-spotted porpoises were noted and the first flying fish were seen. The surface temperatures were still moderate during the first week in May in the northeast Gulf and the highest recorded by the Oregon for the present cruise was 75° F.

Trials of various designs of shrimp trawls were continued. Promising results were obtained with a trawl having the bottom body almost entirely cut away. It is necessary to carry out repeated trials, of course, before gear designs can be properly evaluated.



Gulf Fishery Investigations

"MV ALASKA" BEGINS BIOLOGICAL AND OCEANOGRAPHIC STUDIES IN THE GULF OF MEXICO (Cruise No. 1): The vessel Alaska cruised over the central and lower Gulf of Mexico--Mississippi Delta to Yucatan, Yucatan Strait, and Florida Strait, and returned to Galveston, Texas. This cruise was started on April 19 and was completed on May 10. The Alaska is operated by the Gulf Fishery Investigations under the Service's Branch of Fishery Biology. These Investigations deal with the biological and oceanographic phases of the Gulf of Mexico's problems as a key to the productive potential of that body of water. (On the other hand, the Gulf Exploratory Fishery Program under the Service's Branch of Commercial Fisheries with the vessel Oregon will concentrate on the exploration of the Gulf's fishery resources and their commercial possibilities.)

This was the first of a series of cruises by the Gulf Fishery Investigations vessel Alaska to cover the same area in each season of the year to study currents, discover spawning areas of various fishes, and resolve the distribution pattern of fish larvae and juveniles. A comparative biochemical study will be made of the various regions of the Gulf bearing on the problem of total biological potential, and what part of this potential can be recovered for human consumption. Vessel personnel occupied 39 stations and made hydrographic casts at each station. At alternating stations plankton tows were made with a half-meter net; few fish larvae and juvenile fishes occurred in the sparse plankton.

Trolling on the Campeche Banks yielded several "little tuna." Two freshly spawned-out females were in the group. The staff preserved the stomach content of one fish; the remaining stomachs were empty. A shark and a few other fishes (full identification not yet made) were captured; all had empty stomachs.

Besides the Service's scientific personnel, two representatives of the Department of Oceanography of Texas A. & M. College, which is cooperating on physical oceanography, were aboard the Alaska.

Cruise 2 of the Alaska, which will cover a second section of the Gulf, was scheduled for June 4.

NOTE: SEE COMMERCIAL FISHERIES REVIEW, AUGUST 1950, PP. 15-6.



Maryland Conference on Striped-Bass Size and Reproduction

How wise is the law restricting the size limit of striped bass, or "rockfish" in Chesapeake Bay waters? From a biological standpoint, an effort was made to obtain an objective answer to this question from May 29 to 31 at a conference composed of Dr. Howard W. Jackson, zoologist at the Virginia Polytechnic Institute in Blacksburg; and Dr. R. V. Truitt, director, and Romeo Mansueti, biologist, of the Maryland Department of Research and Education, at Solomons, according to a June release from that Department.

During the last few years Dr. Jackson has cooperated with the Chesapeake Biological Laboratory on a project to discover the viability and degree of effectiveness of striped bass as spawners at different sizes and ages. The Laboratory has actively collected eggs from striped bass in all stages of growth and forwarded them to Dr. Jackson for analysis. Laboratory personnel have received cooperation from Maryland fishermen who have allowed roe to be collected from their fish for study.

By studying the eggs - that is, weighing, counting, and observing them—and correlating this data with the age and weight of roe or "cow" striped bass, some clue as to the fish's sustaining ability to produce its own kind may be gathered for the better management of the fishery. An important part of this study is to discover whether young or old "cows" can produce the more vigorous strains of young for future stocks of fish. This will be determined by observing the state of the ovaries in various stages of development, the embryonic development, and rate of growth of fish from different age groups of striped bass. The problem ultimately resolves itself to the potentiality of the germ plasma in young and old.

Commercial fishermen and biologists alike have asked themselves:

1. Do roe striped bass under 15 pounds produce as many eggs and spawn with as much vigor as those over the limit?
2. Are old striped bass weighing up to 50 pounds able to contribute to the productivity of Chesapeake Bay as efficiently as young spawners? Or are they a detriment to the population by eating more food and spawning less?
3. Are the best potential spawners, which occur in larger numbers, a part of the group made up of fish under 15 pounds?

4. Should the brood stock of young fish between three and 15 pounds be protected?
5. Do large old "cow" striped bass spawn every other year? If so, when and how often?

Biologists have found that in general, male or "bull" striped bass are sexually mature at the age of three, the female or "cow" often are not mature and ready to spawn until they are in their fourth year. A female fish produces an amazing number of potential baby bass at one spawning of which but a small percentage reaches maturity. Statistics are available as follows:

3 year-old female, at 3 pounds, produces 14,000 eggs;
4 year-old female, at 4½ pounds, produces 265,000 eggs;
9 year-old female, at 15 pounds, produces 1,300,000 eggs;
12(?) year-old female, at 50 pounds, produces 3,300,000 eggs.

It has been estimated that a 75-pound female will produce 10,000,000 eggs.

Such information on the productivity of various-aged striped bass does not exist to a sufficient degree to provide a reason for a serious reconsideration of the 15-pound limit. No striped bass less than 11 inches in length or weighing more than 15 pounds can be taken (except at Hog Back Shoals in the Susquehanna River), but recently the State Legislature tried to increase the maximum size limit from 15 to 25 pounds. Virginia fishermen are allowed to catch striped bass up to 25 pounds. Massachusetts allows its fishermen to keep "rockfish" over the 15-pound limit.

Striped bass have not been increasing appreciably over the years, except for the occasional appearance of dominant year-classes—groups of bass that were produced in such huge amounts in certain years that they caused a marked increase in the numbers caught for short periods. What is the biological basis for such "bumper" crops is not known. Studies have shown, however, that this surplus of fish was short-lived, and the trend of declining population resumed its former character. How this is related to the fecundity of striped bass is a major, long-range problem.

The conference was concerned with a discussion of the data and its interpretation. Plans were made to consider the probability of organizing the results obtained during the study period. The study will culminate in a publication to be issued by the Laboratory.



Middle and South Atlantic Fishery Investigations

SHAD INVESTIGATIONS IN THE HUDSON AND CONNECTICUT RIVERS: Data from tagging shad at the mouth of the Hudson River disclosed that 456,072 fish entered the river in 1950, according to an April report from the Service's Middle and South Atlantic Fishery Investigations. Of these, 306,154 were caught; about 150,000 escaped. Tagging on spawning grounds showed that of the numbers reaching there, 154,000 escaped the fishery; this figure closely agrees with the total calculated from tagging at the mouth of the river.

There seems to be some correlation of ship traffic in the Hudson with the shad catch there. Final results must await establishment of a catch per-unit-of-effort

index for past years, since some years of good catches seem the result of increased effort rather than an abundance of shad.

Two members of the laboratory staff have devised a method for reading total age of shad from scales. This method involves the use of transverse grooves to determine the first three or four years of age—the most difficult period to read. Using the criteria set up, two biologists who have made independent readings have reached very good agreement. Final proof of the method will result from anticipated returns of shad which will be marked as juveniles in the Connecticut River this year.

Scale readings from shad caught in the lower reaches of the Hudson River show the largest percentage of shad of both sexes return to spawn at 4 years of age, with a large percentage of females returning first at 5 years of age. The biggest percentage of shad in the sample were spawning for the first time; as represented by scale samples, chiefly 4-, 5-, and 6-year-olds composed the catch, with the 5-year-olds predominating.



New England Tuna Explorations

"WESTERN EXPLORER" BEGINS FOUR-MONTH BLUEFIN TUNA EXPLORATORY CRUISE: A four-month bluefin tuna exploratory cruise in New England waters was initiated when the U. S. Fish and Wildlife Service exploratory fishing vessel Western Explorer sailed from Boston, Mass., on June 23.

The Explorer will search for untapped resources of bluefin tuna in waters principally off the shores of Maine and Massachusetts. Primary objectives of the cruise are to locate commercial concentrations of bluefin tuna, determine their pattern of abundance, direction of migration, and potential quantities for commercial use. The development of an entirely new fishery in the New England area will hinge on the results obtained from this cruise.

The 85-foot Pacific Coast-type vessel carries an 11-man crew. It is fully equipped with a 28,000-pound purse seine, which is 2,100 feet in length. The seine will be used to take schools of 75- to 150-pound bluefin tuna—the best size for canning.

The fishing industry, especially the Maine sardine canners, is watching the bluefin project with unusually keen interest. As the New England sardine season usually ends in the fall, tuna canning the remainder of the year would tend to even employment levels in this industry. The bluefin could be put into freezers until the winter lag arrives, then canned with present canning equipment. Only minor changes and adaptations will be necessary.



New Marine Research Institute Organized

A new marine research institute has been formed in the Woods Hole, Mass., area, already famous for its marine laboratories. The new institute, the Marine and Fisheries Engineering Research Institute, was incorporated as a non-profit organization and

was founded to fill a gap between the marine research performed by scientific organizations and the practical engineering aspects required by the fishing industry and other industries with marine problems. The formation and organization of the Institute became possible through the initial financial support of the Friendship Fund, Incorporated, of New York City, according to an April 6 news release from the Institute.

Columbus O'D. Iselin, senior oceanographer and former director of the Woods Hole Oceanographic Institution, was named president of the new organization, while Francis Minot, Maritime Consultant of Cotuit, Mass., became vice-president and director.

The Marine and Fisheries Engineering Research Institute will "promote the advancement of the fishing industry; oceanography and other marine sciences and industries; and the exploitation of the food and other resources of the oceans and other bodies of water." This will be done through research, and the development and testing of tools and techniques, including but not limited to vessels, propulsion systems, equipment, fishing gear, fishing and marine-planting methods, and marine life.



New Tagging Method for Small Crabs

What is the rate of growth of the blue crab under natural conditions? Where and how far do young crabs travel? These are just a few of the questions that might be answered by the new method of tagging immature crabs to be tested by biologists from the Maryland Department of Research and Education and the Virginia Fisheries Laboratory, according to a June news release. They tagged 164 crabs in the vicinity of Smith Island during May 9 through 11.

The cooperative field crew from the Chesapeake tidewater states obtained crabs by scraping the bottom of the shoals at Ewell. Those crabs ready to shed their old skin were tagged at the suture where the old shell opens. At this point the tag cannot be sloughed off with the old skin. Also, the new tagging procedure will not prevent the crab from shedding in a natural manner. Heretofore, according to the biologist at the Chesapeake Biological Laboratory, only large mature crabs had been tagged from which inadequate results were obtained.

Although the new method developed at the Virginia Fishery Laboratory requires more time for the actual tagging operation, the probable successful results will far outweigh this minor disadvantage.

The Chesapeake Biological Laboratory would like to obtain the measurement of the width, from spine to spine, of each tagged crab obtained by crabbers, in addition to the information requested on the tag. Detailed notes on size, sex, and number were taken from each crab that was tagged. A reward of \$1 is being paid by the U. S. Fish and Wildlife Service for each tag returned.



North Pacific Exploratory Fishery Program

"JOHN N. COBB" TO CONTINUE EXPLORATIONS FOR ALBACORE: In order to continue the exploratory fishing for albacore tuna carried on in the 1949 and 1950 seasons, the John N. Cobb left Seattle June 11. This exploratory fishing vessel of the Service's Branch of Commercial Fisheries will attempt to intercept the tuna while they are still in the offshore waters of the states of Washington and Oregon, and to trace the speed and direction of their movements.

Extensive experimental fishing with gill nets and flag-line gear is planned.

The John N. Cobb will fish with usual commercial gear, such as surface-trolled jigs. In addition, both nylon and linen gill nets, modified from those used last season, will be fished. Flag-line gear constructed of wire will also be fished experimentally. Oceanographic and other scientific information related to the problem also will be collected.

A daily broadcast of findings will be made from the vessel to the fishing fleet.



Pacific Oceanic Fishery Investigations

TUNA OCCURENCE AND PURSE SEINING INVESTIGATED BY "JOHN R. MANNING" (Cruise No. VI): Investigations on the occurrence of tunas in certain areas in the Central Pacific Ocean and to determine the feasibility of using a standard West Coast tuna purse seine to catch them were conducted by the John R. Manning on its Cruise No. VI. This vessel of the Service's Pacific Oceanic Fishery Investigations, which left on this cruise March 30, confined its activities to waters adjacent to the Line Islands, including Kingman Reef, Palmyra, Washington, Fanning, and Christmas Islands.

The purposes of the cruise included:

- (1) To conduct experimental purse-seine fishing operations in the waters around the Line Islands and to develop effective techniques for sampling surface fish in those areas.
- (2) To ascertain the abundance of tunas in those areas.
- (3) To collect biological material, such as ovaries, stomachs, gill arches, weights, and morphometric data.
- (4) To make hydrographic observations by means of the bathythermograph and recording thermometer.
- (5) To determine characteristics of linen seine webbing under conditions of purse-seine operation.

Nine purse seine sets were made during the cruise. These sets were as follows -- one under a bird flock, one around porpoise, three around tunas, and four experimental sets. All of these sets were waterhauls except one that caught four porpoise and three sharks. Prevailing conditions of weather and seas limited the operation of the purse seine close to shore and within the lee of the islands. Two surface troll lines were used throughout the cruise to catch fish on artificial lures. The great-

est number of fish observed and caught was in the area of Christmas Island. Thirty-two flocks of birds and seven schools of fish were observed during this cruise.

The catch (by trolling) of tuna was entirely yellowfin and totaled in excess of one ton. An estimated ton of wahoo was also caught, in addition to less than a dozen rainbow runners, barracuda, and ulua.

The vessel returned to Honolulu on May 17; and its next cruise is scheduled for June 1 in the waters adjacent to the Hawaiian Islands.



"The Story of Menhaden" to be Displayed at Two International Film Festivals

The new educational film, The Story of Menhaden, recently completed by the Fish and Wildlife Service, has been selected by the Department of State for competitive display at two international film festivals to be held this summer, the Department of the Interior announced on May 18.

One festival is the world's outstanding exhibition of motion picture art at the 12th International Exhibition of Cinematographic Art--to be held in Venice, Italy, from August 8 to 18; the other is the 5th International Edinburgh Film Festival at Edinburgh, Scotland, from August 19 to September 9.

The Interior film was one of those chosen by the Department of State's Motion Picture Review Committee from approximately 100 of the best films submitted by the Federal Government agencies. Filmed cooperatively with the menhaden industry, who financed the year-long effort, it was planned and supervised by the Service's Branch of Commercial Fisheries.

The 16-mm. sound and color motion picture depicts the method of fishing for menhaden, plant processing, and the ultimate uses of menhaden meal, oil, and solubles in the feeding of hogs and poultry; in preparing fortified vitamin oils; in paints, varnishes, insect sprays, printing inks, and soap; and the use of the oil as a lubricant of machinery, in aluminum casting, and in leather tanning.

In 1949 another Fish and Wildlife Service educational film, It's the Maine Sardine, won first prize in the public relations series at the 10th International Exhibition of Cinematographic Art in Venice.

NOTE: SEE COMMERCIAL FISHERIES REVIEW, FEBRUARY 1951, P. 108; OCTOBER 1950, P. 35; SEPTEMBER 1950, P. 22; DECEMBER 1949, P. 31.



Upper Mississippi River Fisheries Hurt by Weather Conditions

Extensive spring floods coupled with a severe winter have worked an undue hardship on the upper Mississippi River Fisheries this winter and spring, according to a May 31 report from the Service's Fishery Marketing Specialist stationed in that area. During the period of the flood, many fishermen lost gear either in the water or on the drying racks along the shore. The fishermen were unable to take advantage of the carp and buffalofish spawning runs because nets could not be put into the water due to storms, unseasonably cold days, and the swift current of the flooded

river. A few of the nets that had been set often were badly damaged by floating debris. Many fishermen were idle as long as four weeks.

Fish markets located near the Mississippi River suffered losses varying from complete destruction of buildings and equipment to only a loss of business due to the flooded river.

Currently, there are practically no gill nets or buffalofish nets being used for fishing in this area. Popular set lines and slat traps are being used to take hackleback sturgeon and catfish, which were in the middle of their spring run in May. Wisconsin law permits the taking of ten sturgeon per commercial fishing license.



Pack of Maine Sardines (Including Sea Herring), 1950

Maine sardines (including sea herring) packed in 1950 amounted to 3,844,164 standard cases, valued at \$21,209,033 to the packers (table 1). Compared with the previous year, this was an increase of 25 percent in quantity, but less than 1 percent in value.

Prior to 1949 the packs of fish canned as sardines and as sea herring were shown separately. However, in 1949 the packs were combined. The comparative data in table 2 likewise represent the combined packs of the past ten years.

Style of Pack	Quantity Std. Cases ^{1/}	Total Value \$	Avg. Price Per Std. Case ^{2/}	Can and Case Sizes	Quantity Actual Cases	Total Value \$	Avg. Price Per Std. Case ^{2/}
Natural	36,408	85,860	2.36	3 1/2 oz. net (100 cans)	3,721,403	20,850,436	5.60
In soybean or other vegetable oil	3,354,642	18,201,996	5.43	9 oz. net (48 cans)	19,137	96,351	5.03
In mustard sauce	293,016	1,560,641	5.33	15 oz. net (48 cans)	37,556	213,916	5.73
In tomato sauce	49,397	193,465	3.92	Other sizes converted to 3 1/2 oz. net (100 cans)	14,567	48,330	3.32
In olive oil	15,681	152,606	9.73				
Other ^{2/}	95,020	1,014,465	10.67				
Total	3,844,164	21,209,033	5.52	Total	3,792,463	21,209,033	-

^{1/}REPRESENT CASES OF VARIOUS SIZES CONVERTED TO 100 3/4-OZ. CANS (3 1/2 OZ. NET) TO THE CASE.

^{2/}INCLUDES SPECIAL PACKS OF SARDINES (INCLUDING SEA HERRING) IN COTTONSEED OIL; PEANUT OIL; SMOKED IN OIL; AND SPICED IN SOYBEAN OIL.

Sardines (including sea herring) in 1950 were canned in 47 plants in Maine and 3 in Massachusetts.

Year	Quantity Std. Cases ^{2/}	Total Value \$	Avg. Price Per Std. Case ^{2/}	Year	Quantity Std. Cases ^{2/}	Total Value \$	Avg. Price Per Std. Case ^{2/}
1950	3,844,164	21,209,033	5.52	1945	2,725,216	12,077,201	4.43
1949	3,074,523	21,051,675	6.85	1944	3,261,984	14,819,803	4.54
1948	3,682,392	29,359,114	7.97	1943	2,505,114	11,104,570	4.43
1947	3,013,910	28,310,674	9.39	1942	2,873,246	12,162,451	4.23
1946	3,276,338	20,275,590	6.19	1941	3,164,787	12,590,958	3.98

^{1/}THE PACK OF HERRING PREVIOUSLY REPORTED AS CANNED SEA HERRING HAS BEEN CONVERTED TO THE EQUIVALENT OF 100 3/4-OZ. CANS (3 1/2 OZ. NET) TO THE CASE AND INCLUDED WITH THE PACK OF SARDINES.

^{2/}CASES OF VARIOUS SIZES CONVERTED TO 100 3/4-OZ. CANS (3 1/2 OZ. NET) TO THE CASE.

The average price per standard case at the canners' level dropped from \$6.85 in 1949 to \$5.52 in 1950. The 1950 price is the lowest since 1946. Sardines in soybean or other vegetable oil in 1950 (the bulk of the pack was put up in this style) averaged \$5.43 per standard case, compared with \$6.95 in 1949. The next important style pack was sardines in mustard sauce which averaged \$5.33 per standard case in 1950, compared with \$7.08 in 1949.



U. S. Production of Marine Pearl-Shell Buttons, 1950

Production of marine pearl-shell buttons in 1950 amounted to 5,803,641 gross, valued at \$9,239,018 to the manufacturers (table 1). This was an increase of 42 percent in volume and 36 percent in value, compared with 1949.

Manufacturers received an average of \$1.59 per gross for their 1950 production, compared with an average of \$1.66 in 1949 and 61 cents in 1940 (table 2).

Table 1 - U. S. Production of Marine Pearl Shell Buttons by States, 1950 (Quantity and Value to the Manufacturers)

State	Quantity Gross	Total Value \$	Avg. Price Per Gross \$
Connecticut	1,266,444	1,909,112	1.51
New York	1,178,469	1,638,560	1.39
New Jersey	1,732,267	2,486,713	1.44
Pennsylvania and Maryland.	1,566,192	3,128,810	2.00
Iowa	60,269	75,823	1.26
Total	5,803,641	9,239,018	1.59

1/PRODUCED PRINCIPALLY FROM IMPORTED SHELLS.

Table 2 - U. S. Production of Marine Pearl-Shell Buttons, 1940-50 (Quantity & Value to the Manufacturers)

Year	Quantity Gross	Total Value \$	Avg. Price Per Gross \$
1950	5,803,641	9,239,018	1.59
1949	4,089,712	6,782,281	1.66
1948	4,974,073	8,587,011	1.73
1947	5,087,000	7,902,000	1.55
1946	3,461,559	5,635,904	1.63
1945	2,398,020	3,286,245	1.37
1944	2,035,320	2,601,626	1.28
1943	2,949,978	3,792,059	1.29
1942	5,364,718	4,532,695	.84
1941	7,424,769	5,337,351	.72
1940	6,830,628	4,140,984	.61

Marine pearl-shell buttons were manufactured in 3 plants each in Connecticut and New York; 12 in New Jersey; 2 in Pennsylvania; 1 in Maryland; and 3 in Iowa.



Wholesale and Retail Prices

WHOLESALE PRICES, APRIL 1951: A seasonal increase in production was reported from all fishing centers during April and wholesale prices of fishery products were substantially below those that prevailed the previous month. The wholesale index for edible fish and shellfish (fresh, frozen, and canned) for April was 107.8 percent of the 1947 average (see table)—3.8 percent below the previous month, but 12.9 percent above April 1950, the Bureau of Labor Statistics of the Department of Labor reports. Demand was generally good during the month, except that frozen halibut continued to move slowly.

Table 1 - Wholesale Average Prices and Indexes of Fish and Shellfish, April 1951, with Comparative Data

GROUP, SUBGROUP, AND ITEM SPECIFICATION	POINT OF PRICING	UNIT	AVERAGE PRICES (\$)			INDEXES (1947 = 100)		
			Apr. 1951	Mar. 1951	Apr. 1950	Apr. 1951	Mar. 1951	Apr. 1950
ALL FISH AND SHELLFISH (Fresh, Frozen, and Canned)						107.6	112.1	95.5
Fresh and Frozen Fishery Products:						100.9	108.3	100.5
Drawn, dressed, or Whole Finfish:						105.1	118.2	106.0
Haddock, large, offshore, drawn, fresh	Boston	lb.	.08	.11	.09	87.2	114.1	95.0
Halibut, Western, 20/30 lbs., dressed, fresh or frozen	New York City	"	.31	.35	.35	91.6	103.2	103.2
Salmon, king, lge. & med., dressed, fresh or frozen	" " "	"	.52	.53	.46	128.2	128.9	112.2
Whitefish, mostly Lake Superior, drawn (dressed), fresh	Chicago	"	.59	.60	.58	170.2	172.0	166.5
Whitefish, mostly Lake Erie pound net, round, fresh	New York City	"	.83	.87	.63	188.1	150.9	141.5
Lake trout, domestic, mostly No. 1, drawn (dressed), fresh	Chicago	"	.59	.60	.69	130.2	131.2	151.9
Yellow pike, mostly Michigan (Lakes Michigan & Huron), round, fresh	New York City	"	.42	.54	.38	98.3	125.5	88.4
Processed, Fresh (Fish and Shellfish):						94.7	95.7	91.9
Filletts, haddock, small, skins on, 20-lb. tins	Boston	lb.	.29	.35	.30	103.5	126.2	106.4
Shrimp, lge. (26-30 count), headless, fresh or frozen	New York City	"	.57	.57	.64	82.5	82.4	92.9
Oysters, shucked, standard	Norfolk area	gal.	4.59	4.47	3.50	113.1	110.0	86.2
Processed, Frozen (Fish and Shellfish):						101.9	105.1	106.5
Filletts: Flounder (yellowtail), skinless, 10-lb. bxs.	Boston	lb.	.38	.37	.40	125.7	120.2	127.5
Haddock, small, 10-lb. cello-pack	"	"	.24	.24	.26	109.8	109.7	116.2
Ocean perch (rosefish), 10-lb. cello-pack	Gloucester	"	.26	.29	.20	127.5	145.0	101.0
Shrimp, lge. (26-30 count), 5-lb. bxs.	Chicago	"	.57	.56	.64	82.5	80.6	92.0
Canned Fishery Products:						118.1	118.0	88.0
Salmon, pink, No. 1 tall (16 oz.), 48 cans per case	Seattle	case	24.62	24.62	14.53	160.5	160.5	94.7
Tuna, light meat, solid pack, No. 2 tins (7 oz.), 48 cans per case	Los Angeles	"	15.00	15.00	14.25	97.6	97.6	92.7
Sardines (pilchard), California, tomato pack, No. 1 oval (15 oz.), 48 cans per case	" "	"	6.75	6.75	5.50	75.5	75.5	61.5
Sardines, Maine, keyless oil, No. 4 drawn (3 1/2 oz.), 100 cans per case	New York City	"	6.53	6.44	7.38	64.0	63.1	72.3

Heavy landings of haddock at New England ports, and good fishing in the Great Lakes resulted in lower prices for most drawn, dressed, or whole finfish during April. This subgroup index during the month was 11.1 percent below March and 0.8 percent below April 1950. From March to April prices dropped for fresh large offshore haddock by 23.6 percent, for yellow pike at New York City by 21.7 percent, and for frozen Western halibut by 11.2 percent; but these were partially offset by an increase of 24.7 percent in the prices of Lake Erie whitefish at New York City due mainly to the Hebraic holidays which occurred in April.

The fresh processed fishery products subgroup index this April declined 1.0 percent as compared to March, but it was still 3.0 percent higher than in April 1950. Prices quoted for fresh haddock filletts during the month were 18.0 percent below March and 2.7 percent lower than in April a year earlier. Fresh headless shrimp prices rose slightly in April, but were still 11.2 percent below the same month in 1950.

With ample cold storage stocks and the seasonal increase in production, the April index for processed frozen fish and shellfish dropped 3.0 percent below March and was 0.6 percent lower than in April 1950. Higher prices were quoted in April as compared to March for frozen flounder filletts (holdings of which are below a year earlier) and shrimp (in spite of large cold storage holdings); but a substantial drop in ocean perch fillet prices occurred. Compared with the corresponding month a year earlier, April prices for frozen haddock filletts, frozen shrimp, and frozen flounder filletts were substantially lower, while frozen ocean perch (rosefish) filletts prices were 26.2 percent higher.

Prices of canned fishery products in April leveled off. The month's index for this subgroup was 0.1 percent higher than in March and 34.2 percent above April 1950. Prices of all canned products under this subgroup during April continued to hold steady at February levels except for Maine canned sardines which increased 1.4 percent from March to April. Compared with the corresponding month a year earlier, April 1951 prices were higher for canned pink salmon by 69.5 percent, for canned California sardines by 22.8 percent, and for canned California tuna by 5.3 percent; but prices for canned Maine sardines were 11.5 percent lower.

RETAIL PRICES, APRIL 1951: Moderate-income urban families from mid-March to mid-April paid slightly higher prices for fresh, frozen, and canned fish, according to the Bureau of Labor Statistics, U. S. Department of Labor. This was due mainly to the continued sharp increase in canned salmon retail prices since the usual seasonal increase in the production of fresh and frozen fishery products brought prices for the latter products down (see table 2). The adjusted retail price index for all foods in mid-April was 225.7 percent of the 1935-39 average—0.2 percent below the previous month, but 14.4 percent above April 15, 1950.

Table 2 - Adjusted Retail Price Indexes for Foods and Fishery Products, April 15, 1951, with Comparative Data

Item	Base	I N D E X E S		
		Apr. 15, 1951	Mar. 15, 1951	Apr. 15, 1950
All foods	1935-39 = 100	225.7	226.2	197.3
All fish and shellfish (fresh, frozen, & canned) ..	do	351.7	351.2	297.5
Fresh and frozen fish	1938-39 = 100	286.4	287.6	269.4
Canned salmon: pink	do	508.1	502.4	347.4

Fresh, frozen, and canned fish and shellfish retail prices in mid-April were 18.2 percent higher than the corresponding month a year earlier, but compared with the previous month this year increased only 0.1 percent. On the other hand, from mid-March to mid-April the retail index for fresh and frozen fishery products dropped 0.4 percent, and it was only 6.3 percent higher than in mid-April 1950.

Higher prices were quoted for canned pink salmon in mid-April than in mid-March. Continuing its upward trend of the past nine months, the canned pink salmon index on April 15 this year jumped to 508.1 percent of the 1938-39 average—46.3 percent above the corresponding period in 1950 and 11.3 percent higher than on March 15, 1951.



Economic Cooperation Administration Program Notes

PORTUGUESE COD-FISHING FLEET TO GET MODERN HOSPITAL-TENDER WITH U.S. AID: Portuguese fishermen operating on the Atlantic fishing banks off Newfoundland and Greenland will be able to get modern hospital-tender service with the help of up to \$700,000 in Marshall Plan dollars, the Economic Cooperation Administration announced on June 7.

The ECA dollars will be used to finance the cost of certain items of ship machinery and medical and surgical equipment needed in the construction of a new hospital-tender, which is to be built for the fishing fleet in a Portuguese shipyard. Among the items to be purchased with ECA dollars are radio equipment, diathermy equipment,

radar equipment, two engines of about 1,250 horsepower, pumps, air compressors, a refrigerating plant, and a shaft line.

The catch of the Portuguese fleet is essential to the economy of that country, since it produces about 75 percent of the salt-fish requirements of Portugal. Primarily a cod fleet, it operates in North Atlantic waters for seven to eight months each year, from spring to fall. The crews number about 3,500 men. In 1950 the fleet consisted of 45 schooners and 18 trawlers, with a fish cargo capacity of about 44,400 tons of salted cod.

Since the fleet operates in waters far from home, a service vessel for medical purposes, as well as for supplies, is essential. The present ship servicing the fleet is the Gil Eanes, a converted German vessel obtained as reparations after World War I, which is now considered unseaworthy.

In requesting Marshall Plan aid to obtain a new hospital-tender, the Portuguese Government reported that a storm this past winter off the Azores proved that keeping the Gil Eanes at sea would mean running the risk of a fatal accident. Now nearly 50 years old, the Gil Eanes has been of invaluable service to the Portuguese fishing fleet. In 1949, for example, it serviced the fleet for 228 days, during which time it made 239 calls to fleet vessels; supplied 371 tons of water, 562 drums of gas oil, and 32 tons of salt; took care of 155 hospital patients; gave 8,075 injections to fishermen; and administered 1,237 treatments.

In addition to delivering mail, the hospital-tender also broadcasts Sunday mass service to the men of the fishing fleet.

The new ship will have accommodations for 74 patients, including 12 contagious patients in two separate sick bays. It will also have refrigerated holds for storage of supplies, a bakery, and a laundry.

The hospital-tender will be the property of an association of the cod-fishing shipowners which is controlled and assisted by the Portuguese Government. Procurement of U. S. supplies for the new tender is being handled through the Portuguese Government.

The total cost of the new hospital-tender is estimated at about \$1,300,000, with the \$700,000 in ECA dollars providing a little less than 55 percent of the total financing.

ECA REQUESTED TO FINANCE PAPER FOR PACKING FISH: The Government of Iceland has requested ECA to finance the import of paper for packing fish (including manila board, cellophane wrappers, waxed cartons, and Kraft paper), according to a June 4 news release from ECA. The total dollar value is \$60,000.

ECA TO INSURE FOREIGN INVESTMENTS AGAINST LOSS: American businessmen will be able to insure foreign investments against loss from expropriation or confiscation under a new type of Marshall Plan guaranty announced on April 23 by the Economic Cooperation Administration. It is designed to encourage American investment abroad.

Acting at the direction of Congress which provided for the new type guaranty in amendments to the ECA Act (Public Law 535), ECA worked out policies for the guaranties in cooperation with a committee of prominent American business and financial experts.

Although the new guaranty is broad enough to cover losses resulting from a taking of property by totalitarian governments which may come to power in any Marshall Plan country by revolution or military conquest, it does not cover war damage or business risks.

EUROPE MAKING PROGRESS ON FOOD PACKAGING: Progress being made toward better quality and packaging of food products will help Western Europe feed itself more adequately as well as earn foreign currency to maintain trade, according to a California earning executive-consultant to the Economic Cooperation Administration and as reported in a May 24 news release from that agency. These improvements would also make it easier to feed allied forces in Europe if there should be any interference with shipping.

Reporting on a three-month trip covering most Marshall Plan countries, the consultant attributed recent progress in food processing and handling to three factors: (1) The forward-looking attitude of certain food industries in various European countries (2) the influence of American forces in Europe during and following the war, and (3) technical help furnished by ECA through its missions and technical assistance projects.

Progress in quick-freezing, canning, and other processing methods, is helping the Marshall Plan countries extend the market and season for food supplies. It also is cutting food losses, and resulting in food with more vitamins. As a result, the Western European countries will be better able to feed their growing population, as well as improve living standards.

From conferences with many branches of food and related industries, the consultant reported numerous examples of enterprise by European concerns to put up better quality products.

The Marshall Plan countries generally, the food consultant reported, are taking an increasing interest in food standardization. Sweden is expecting a new food and drug law; Turkey is making good headway toward standardization, with similar progress noted in other countries.

In Norway and Sweden outstanding examples of steps to maintain quality of export goods were found. Both countries have excellent laboratories to inspect products to see that minimum quality standards are met as a requisite for export licenses.



ECA Procurement Authorizations for Fishery Products

There were no procurement and reimbursement authorizations for fishery products and byproducts (edible and inedible) announced by the Economic Cooperation Administration during May this year. However, during the month a reduction of \$162,000 was announced for authorizations to Greece to be used for the purchase of canned fish from the United States and Possessions.

Procurement authorizations released by ECA for fishery products and byproducts for the period April 1, 1948, through May 31, 1951, totaled \$29,901,000 (\$17,212,000 for edible fishery products; \$11,149,000 for fish and whale oils; and \$1,540,000 for fish meal). The edible fishery products total consisted of \$14,360,000 for canned fish and \$2,852,000 for salted fish.



International

FOOD AND AGRICULTURE ORGANIZATION

FAO SERVICES USED BY U. S. IN CALCULATING FOOD REQUIREMENTS: While it is generally true that most of FAO's services are given to underdeveloped countries, the more-developed countries also receive substantial benefit from membership in FAO, according to a news item from the National Conference of Nongovernmental Organizations on FAO.

One case in point is FAO's publication "Food Composition Tables for International Use," issued in October 1949. These tables have been adopted by the U. S. Department of the Army and are the basis for all food-value calculations for U. S. Government establishments in areas of military responsibility in Europe and the Far East.

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REPORT ON EXPANDED PROGRAM OF TECHNICAL ASSISTANCE: The Food and Agriculture Organization has issued a report summarizing the progress and accomplishments of its technical assistance program from July 1950 to May 1, 1951. During the brief period (since October 1950) that technical assistance funds have been available, FAO has completed 7 projects and has initiated field work on 61 others. A large number of requests from governments have been examined from the standpoint of their technical and administrative feasibility and scheduled for operations. Duplication with bilateral and other technical assistance projects is avoided. By May 1, 1951, FAO had concluded 68 supplemental project agreements with 32 governments, calling for the provision of 226 experts and 159 fellowships. These approved projects, including essential administrative and supervisory costs, will involve an estimated total expenditure of the equivalent of US\$4,117,757 out of FAO's allocations for the first and second financial period. In addition, 36 supplemental agreements with governments are currently under negotiation, calling for 136 more experts and 200 additional fellowships at an estimated total cost in 1951 and 1952 of US\$1,675,100.

Among the numerous types of assistance requested by governments are included the following fisheries projects.

Fish Production and the Management of Fisheries Resources: The rational exploitation and conservation of inland, offshore, and deep-water fisheries resources including improvements in fishing craft, gear, and techniques will involve 17 experts and 4.2 percent of the funds. This activity will need to be expanded materially next year to meet the growing demand of governments for assistance in expanding their fisheries as a valuable source of high-protein food for low and medium income families.

1/THIRD REPORT TO THE TECHNICAL ASSISTANCE BOARD ON THE ACTIVITIES AND PROGRESS OF FAO UNDER THE EXPANDED PROGRAM OF TECHNICAL ASSISTANCE FOR ECONOMIC DEVELOPMENT, MAY 1, 1951, (CL 12/7), 55 P., PROCESSED.

Processing and Marketing of Fisheries Products: Includes grading, standardization, prices and marketing margins, and the development of adequate credit resources for the fisheries industry. This will involve 8 experts and 1.7 percent of the funds. Some of these experts are being used this year on exploratory studies of the marketing problems involved and it is anticipated that governments will require a larger number of experts in this field in the months immediately ahead.

Summary of Technical Assistance Fisheries Activities by Countries: **BRAZIL:** The Government of Brazil in the interest of implementing its policy of economic and social development under the Salte Plan and related projects, has requested that FAO provide initially the services of twelve experts and three fellowships in forestry, agricultural technology, fisheries, and rural welfare. Because modernization of the fisheries in Brazil holds great potentialities for improving the diets and providing gainful employment for large numbers of the population, the Government desires the services of a fisheries expert to advise on its over-all program for the modernization of fishing equipment and on the development of fish preservation, processing, storage, and distribution. As the work of this fisheries adviser progresses, it is anticipated that a number of additional experts may be required to concentrate on particular phases of the development program.

CEYLON: This country is receiving a fisheries expert, qualified as a fishing craft and gear technologist to advise and assist on various phases of its fisheries development program. This program involves the conversion and mechanization of a large number of local fishing craft and the extension of trawling, drift netting, dory fishing, and pareja fishing in an effort to increase the productivity of the industry and to demonstrate improved fishing practices to local fishermen.

CHILE: An agreement in fisheries has been signed by the Government of Chile. Chile has an extensive coastline, rich in fisheries resources that have been only partially exploited because of inadequate scientific knowledge of the character and extent of these resources and because of a number of economic and technological obstacles to their efficient development. In an effort to expand and modernize its fisheries, the Government in collaboration with FAO fisheries officials has outlined a program for the systematic appraisal of the fisheries of Chile, including the initiation of several research and development schemes. In its initial stages this program will require the assistance of two fisheries experts, one a qualified fisheries biologist, who will help organize and conduct the inventory of the country's fisheries resources and formulate the research program. The second expert will study the economics of production, marketing, and consumption of fisheries products with a view to recommending improvements in handling methods, reduced costs, and a general increase in fish consumption. Aside from the many economic benefits to be gained from an expanded fisheries industry, the people of Chile have considered their fisheries resources a valuable source of high-quality protein food which could be made to contribute greatly to the achievement of a more balanced diet. The government will provide qualified men to work with these experts as well as the necessary vessels, gear, and crews for the marine survey.

ECUADOR: Since the potentialities of the fisheries industry of Ecuador have not been intensively explored, the first task of the two fisheries experts assigned to Ecuador will be to organize and initiate a program of survey and assessment of the marine fisheries resources, in both the mainland coast and Galapagos areas; to make recommendations for the regulation and rational utilization of commercial fish and shellfish resources on a sustained yield basis; to ascertain what improvements in the preservation, processing, storage, and distribution of fishery products are

necessary and practical; and to recommend economic and other measures for increasing domestic consumption of these important sources of protein food. The initial assignment of the fisheries experts is six months.



HAITI: FAO's technical assistance to the Government of Haiti is based in part upon the findings and recommendations of the United Nations Mission to Haiti in which FAO cooperated and upon several independent studies by FAO of the problems and potentialities of food and agricultural development in some of the decadent areas of the country. While these and similar studies clearly reveal the seriousness of the problems that must be overcome in the improvement and development of Haiti's agricultural, fisheries, and forestry resources, FAO has found it advisable to avoid the establishment of a large technical assistance mission in the country, but rather to supply a series of experts at various stages as the government proceeds with the implementation of its policy of rural development. One of the major recommendations of the United Nations Mission was to increase the supply of food, particularly protein, suited to the peasant taste and economy through the culture of fish in ponds, estuaries, swamps, lagoons, irrigation canals, etc., thus putting into use latent food-growing media and utilizing extensive unused swamp and lowland areas. As part of its regular program, FAO supplied a fish culture specialist to map out such a program. Following this, the Haitian Government appropriated \$10,000 in 1950 and assigned two government technicians and a number of lay persons to initiate the program. Areas for nursery ponds and for demonstration and experimental ponds were set aside on grounds of the government experimental farm at Damien. One joint Government and private fish culture project has been initiated at Damien, and at least two others are contemplated. With assistance from other governmental agencies, ponds are now being constructed. FAO, under the technical assistance program, is extending its services on this project by providing a full-time fish culture specialist for a minimum period of one year, to supervise and develop the project. It also is giving a fellowship of six months' duration for the

senior Haitian officer assigned to the project to enable him to study fish culture practices in countries abroad where such practices are well advanced.

ISRAEL: Fisheries production in Israel is rated next in importance to field crop production, as the inadequate supply of meat makes fish an essential source of protein. Therefore, technical assistance by FAO is under consideration in the form of an expert for consultation in fisheries research, an instructor in pelagic fishing, and fellowships in fisheries technology, fish breeding, and new fishing methods.

PAKISTAN: Three fisheries experts will assist in the planning and design of a fish harbor and associated marketing facilities at Karachi. A consultant marine engineer will advise on the site and plan the major constructional features of the harbor. A fishery port master, in collaboration with the marine engineer, will be concerned with the wharfage, storage, icing facilities, selling floors, and other installations required for the efficient handling of fisheries products and the servicing of vessels. A commercial fisheries consultant will assist on the local and inland marketing, transport, storage, and distribution systems and facilities. These experts will complete the first phases of their assignments in about eight months after which time further work may be required when the actual construction is undertaken.

THAILAND: The FAO Fisheries Mission made a number of recommendations for the fuller development of Thailand's rich fisheries resources; many of these recommendations have been translated into the Government's program. To accelerate and broaden this program the Government now desires the services of one additional adviser on the development of inland fisheries in fresh and brackish waters. This expert, working with the staff of the four fisheries experiment stations, will assist in overcoming the many practical difficulties encountered in the wide-scale introduction of pond and inland fish culture, including inland fisheries management, control of noxious weeds in inland waters, the propagation and distribution of fish fry, and other problems of inland and fresh-water fisheries. Four fellowships of three months each will be awarded for special studies of problems encountered in the program.

Regional Technical Assistance Activities: **ASIAN FISHERIES TRAINING PROGRAM:** One of the principal subjects under discussion at the Third Meeting of the Indo-Pacific Fisheries Council held in Madras, India, February 1-6, 1951, was ways and means of encouraging fishery training and education to make up for the lack of suitably trained personnel to assist in developing fisheries in the Indo-Pacific area. The Council recommended not only that governments take steps immediately to initiate and expand existing training projects, but also requested that FAO assist such governments as might be prepared to act as host countries in establishing regional training schools. Among the prospective schools or centers to accomplish the recommendations of the Madras Meeting are a regional training center devoted to teaching practical pond culture techniques and another center to be held later devoted to instructions in the operation and maintenance of vessels, motors, and fishing gear. It is anticipated that arrangements will be concluded early enough to permit the holding of one or both of these regional training centers in 1951.

LATIN AMERICAN FISHERIES TRAINING CENTER: The Second Latin American meeting on Food and Agricultural Programs and Outlook requested FAO to establish a fisheries training center in the region to help train qualified personnel in the biologic, technologic, and economic aspects of fisheries and related industries. The meeting visualized that such organized training in some Latin American country having the necessary facilities would help governments in their efforts to make greater use of these resources to satisfy the food requirements of their people.

At the invitation of the Government of Chile, preparations are being made to conduct this center at the Santamaria Technical University, Valparaiso. The center will run for about ten weeks beginning on January 6, 1952. Participating governments will pay travel and subsistence for one-half of their trainees and FAO, through its Technical Assistance Fellowships, will pay the expenses of the remainder.

The Economic Commission for Latin America, the Organization of American States, the Institute of Inter-American Affairs, and UNESCO are expected to cooperate in this project.

WHALING

JAPAN ADHERES TO INTERNATIONAL WHALING AGREEMENT: The Japanese Government, on April 21, 1951, adhered to the International Agreement for the Regulation of Whaling signed at Washington, December 2, 1946. Notification of adherence was communicated to the Secretary of State by the Minister for Foreign Affairs of Japan. Japan is the seventeenth country to ratify or adhere to the Agreement, the other parties being Australia, Brazil, Canada, Denmark, France, Iceland, Mexico, Netherlands, New Zealand, Norway, Panama, Union of South Africa, Sweden, United Kingdom, United States, and U.S.S.R.

INTERNATIONAL WHALING COMMISSION MEETING ANNOUNCED: The International Whaling Commission, established by the Agreement, will convene its third annual meeting in Capetown, Union of South Africa, beginning July 23, 1951. The United States is represented on the Commission by Dr. Remington Kellogg, Director of the U. S. National Museum, Commissioner, and Dr. Hilary J. Deason, U. S. Fish and Wildlife Service, Deputy Commissioner.



Australia

PEARL AND TROCHUS SHELL PRODUCTION, 1950: Pearl and trochus shell Australian production in 1950 was valued at £622,850 (US\$1,388,956) as compared with £601,375 (US\$1,768,043) in 1949, states the March 1951 Fisheries Newsletter of the Commonwealth Director of Fisheries. Approximately 70 percent of the 1950 production was exported to the United States and earned over \$1,000,000 for Australia.

Pearl shell production in 1950 was 31 percent less in quantity and 6.3 percent less in value than in 1949. The main reason for this decrease was that Thursday Island producers diverted some of their pearling vessels to trochus fishing, and the pearl shell divers concentrated on an area which has been so extensively fished over the past four years that shell has become scarce. Weather conditions in 1950 also hampered Thursday Island operations.

Beche-de-mer production in 1950 was negligible.

Pearl shell prices per ton in 1950 averaged a third higher than in 1949--£506 (US\$1,128) as compared with £373 (US\$1,097), respectively. Pearlers, who for the past two years contracted with a New York City firm, have renewed the contract for three years on conditions satisfactory to all parties.

NOTE: VALUES CONVERTED ON THE BASIS OF THE FOLLOWING RATES OF EXCHANGE FOR THE AUSTRALIAN POUND STERLING: 1950 - £1 EQUALS US \$2.23; 1949 - £1 EQUALS US\$2.93.

SHRIMP GRADER: A new type of shrimp (prawn) grading machine--reported remarkably simple, compact, and easily cleaned--was successfully demonstrated on an Australian fishing boat at Pittwater (Sydney) in February this year.

The machine was invented by L. J. Allan, an engineer now living at Pearl Beach, who is also the designer of a compact-type winch for small fishing boats.

The essential feature of the new shrimp grader is a series of vibrating glass rods with tapered slots. The vibration of the rods (the machine is driven off the boat's engine) shakes the shrimp along them; the rods are arranged to sort out the shrimp into previously determined grades. All rejected shrimp are returned to the sea immediately. The shrimp going through the machine did not seem to be injured in the trial demonstration. The inventor decided on glass for the vibrating rods after experiments with metal rods had shown that for efficient grading no dirt or rubbish must adhere to the rods (glass rods are easily cleaned and, if necessary, can be "lubricated" with a bucket of water during the grading operation).

It is intended to manufacture the machine in three sizes, using stainless steel. The glass rods are replaceable individually. The medium-size machine will be only 3 ft. long, 15 in. wide, and 2 ft. 3 in. high, yet will be guaranteed to handle at least 200 pounds of shrimp an hour. The maximum capacity would be 350 pounds.

TUNA INVESTIGATION IN TASMANIAN WATERS: The clipper Senibua, having proved the effectiveness of live-bait pole fishing for tuna along the New South Wales coast, is now attempting to duplicate its success by this method of fishing in Tasmanian waters,

The Senibua is a tuna vessel owned and operated by a company which was organized to catch tuna in Fijian waters. This vessel made its first cruise in Australian waters early in October 1950. However, in pole fishing for tuna off New South Wales, the vessel was dogged by bad weather.

In mid-December 1950, the Commonwealth Treasury, on the recommendation of the Minister for Commerce and Agriculture, agreed to assist financially another month's exploratory fishing, with a rebate to the Government on all tuna taken. During this month fishing operations were supervised by a Technical Advisor of the Commonwealth Fisheries Office. Despite continued bad weather, the operations proved the efficiency of pole fishing, and sufficient tuna were taken to reimburse practically all of the expenditures.

Following this success, the Minister and the Treasury agreed to an extension of Commonwealth assistance on the same terms for another month. As the Tasmanian Government fisheries vessel Liawenee had been working on tuna and had been taking fish by trolling, it was decided to send the Senibua to Tasmania. The clipper arrived in Tasmania at the end of January 1951. Depending on the results in Tasmania, it is hoped that it may yet be possible to use the Senibua in another State as well.

Since the tuna schools come close to the coast, boats much smaller than California tuna clippers can be used for tuna pole fishing in Australia. Already several New South Wales fishermen have installed live-bait tanks for pole fishing.

Prospects of a big tuna industry along the southern half of the Australian mainland coast are considered good. In addition to providing many fishermen with

a good living, of special interest to Australia is the fact that a canned tuna industry will provide valuable dollar-earning exports.

NOTE: ALSO SEE COMMERCIAL FISHERIES REVIEW, FEBRUARY 1951, PP. 47-9.



Belgium

FISH FILLET PLANT: With Marshall Plan-financed freezers, a Belgium company is engaged in the quick-freezing of fish fillets in Ostende. This is the first and only company in Belgium to go into this business, declares a May 18 ECA news release. The plant, which has meant new life to the economy of this ancient North Sea fishing port, is capable of processing 125 metric tons of fish per day and producing 50 tons of fillets. It has a storage capacity for 2,000 tons of cellophane-wrapped fillets.

The four giant blowers required for quick freezing were obtainable only in the United States, and the Marshall Plan supplied US\$24,000 for the purchase of these blowers. In addition, US\$2,000 were supplied for the purchase of a cellophane packager from the United States.

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IMPORT POLICY: Belgian importers are relatively free to buy goods from dollar areas and can usually secure the necessary dollar exchange for payment, according to word to the ECA Mission in Brussels. This means that American suppliers are permitted to sell almost any commodity to a Belgian importer, for which there is a market in Belgium.

In order to import, a Belgian firm secures an import license from any of the 2,000 banks or makes a so-called declaration "in lieu of license" and secures the necessary exchange. This payment system applies not only to ECA-financed imports but also to non-ECA dollar-financed imports.



Brazil

AMERICAN FIRM TO PROMOTE SHRIMP EXPORTS: A representative of an American frozen foods firm is seeking to establish a cold storage plant in Sao Luis, Brazil, and to promote the exportation of shrimp. Negotiations are in progress between the State of Maranhao, fishing vessel owners, and companies who have plant installations, an American Consul dispatch from Belem dated April 20 states. The installations now in existence are practically unused.

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INTERNATIONAL CONVENTION FOR THE REGULATION OF WHALING RATIFIED: The Brazilian Legislative Decree No. 14, of March 9, 1950, ratified the International Whaling Convention and attached supplementary regulations, according to a May 5, 1951, report from the American Legation at Rio de Janeiro. The Brazilian instrument of ratification was deposited in Washington, D. C., on May 9, 1950. The Diario Oficial of April 24, 1951, published Decree No. 28,524 dated August 18, 1950, which declared that the Convention "be executed and fully observed."



Canada

CANNED LOBSTER 1951 MARKET OUTLOOK: In discussing the market prospects for canned lobsters during 1951, Nova Scotian dealers have expressed the belief that prices for the 1951 pack will be at least as high as in 1950, according to an April 27 American consular report from Halifax. Reports indicate that the Canadian commodity is said to be getting heavy competition in the New York metropolitan area and the mid-western United States from rock lobster or crayfish from South Africa, Cuba, New Zealand, and Australia.

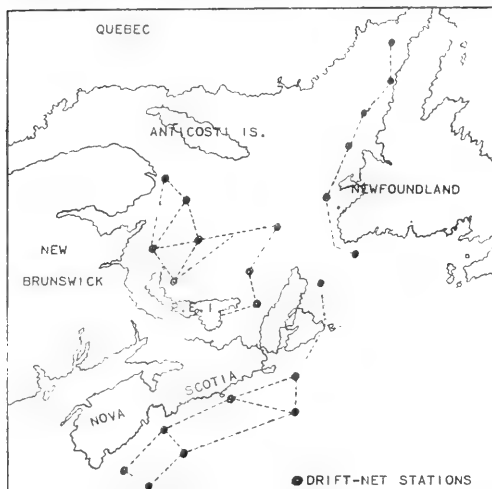
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DRIFT-NET HERRING FISHING EXPERIMENTS ON EAST COAST: In line with a general plan of attempting to improve the efficiency of fishing on the east coast of Canada, the Atlantic Biological Station at St. Andrews, N.B., has been conducting experiments with drift-nets for catching herring and mackerel.

Drifting for herring is not new. It has been the most widely used and most successful method of capture in the North Sea since the earliest times. However,

it has not been generally adopted by Canadian fishermen and these experiments were designed to test the effectiveness of the method in our waters and to determine the offshore distribution of herring during the summer months.

The experiments were carried out from June 1 to November 12, 1950, in the southwestern portion of the Gulf of St. Lawrence, along the Nova Scotia coast from Canso bank to Roseway and off the west coast of Newfoundland. Good catches of both herring and mackerel were made in the southwestern Gulf from early June until the end of September but no appreciable quantities were taken at any time in the other two areas, the March 1951 Trade News of the Canadian Department of Fisheries reports.



LOCATION OF DRIFT-NET STATIONS AND AREAS WHERE EXPERIMENTS WERE CONDUCTED WITH DRIFT-NETS FOR CATCHING HERRING AND MACKEREL.

Nets of $1\frac{1}{2}$, 2, $2\frac{1}{2}$, and 3 inches stretched mesh were included in the fleet. The nets were set just before sunset and hauled back immediately after daybreak.

Very few herring were taken in the $1\frac{1}{2}$ - or 3-inch nets. The 2-inch nets were most effective in the American bank, Orphan bank, and Bradelle bank areas and the $2\frac{1}{2}$ -inch nets in areas north and south of the Magdalen Islands and off the north shore of Prince Edward Island. The 3-inch caught more than 85 percent of the total weight of mackerel taken.

The main interest of the investigation was to explore the areas as thoroughly as possible and, to do this, a network of 22 stations was established. Sixteen of

A fleet of 12 gill nets was used; each net being approximately 40 yards long and 25 feet deep.

these stations were occupied during three cruises in the southwestern Gulf and along the Nova Scotia coast, but only one cruise was made along the west coast of Newfoundland where the other six stations were located. Only one night was spent at each station during each cruise regardless of whether good catches were made or not.

The largest catch was made on June 5 on LeFond Georges about 12 miles southwest of the Magdalen Islands, where 6,000 pounds of herring and 3,000 pounds of mackerel were taken. At five of the stations, catches in excess of 5,000 pounds were made. The total catch for southwestern Gulf Stations was slightly more than 42,000 pounds for 22 sets, an average of 1,920 pounds per set. The largest catches are equivalent to average catches in the North Sea with about ten times as much net, and must be considered very encouraging.

Plans are being made to continue these explorations during the 1951 season. It is hoped to have a greater coverage of the Gulf and the more shallow areas off the Nova Scotia and west Newfoundland coasts. It is also planned to test other sizes of gill nets and to have the nets rigged in a similar manner to those used commercially in the North Sea.

The stocks of herring on the Atlantic coast constitute one of Canada's major unused fishery resources. Fishing is carried on, mainly, during a short spawning season of from three to six weeks duration. The herring are, at this time, in their poorest condition, and are suitable only for bait, for low grades of pickled herring, and for reduction to oil and meal. If sufficient quantities of high-grade herring can be located and caught throughout the summer and early fall months, it is not inconceivable that a fat herring industry will develop here similar to that which has been carried on for many years in Western European countries.

WHITEFISH INSPECTION COMPULSORY: Canadian Government inspection of whitefish for export became compulsory on May 16. The new whitefish inspection system has been carried on for some months on a voluntary basis to enable the industry generally to accustom itself to the new procedures. This also allowed the Canadian Department of Fisheries a training period for its inspection personnel in the practical application of the new regulations.

Buyers of Canadian whitefish have found that application of the regulations, during the voluntary period, resulted in a uniformly higher quality product reaching the export markets in the United States. Exporters taking advantage of this service have had their shipments facilitated through United States border points.

These new regulations, to ensure that only the highest quality of whitefish products continue to be prepared for export, resulted from a close study of the problem by the provincial governments concerned, the fishing industry itself, and the Canadian Department of Fisheries.

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NEWFOUNDLAND FISHERIES OUTLOOK "NOT SO BRIGHT": In a speech on May 9 in which he presented the new 1951-52 budget estimate to the Newfoundland Assembly, Premier Joseph Smallwood stated that the future of Newfoundland's fisheries was "not so bright," according to a May 17 American consular dispatch from St. John's. He added that the Government was endeavoring to combat a postwar decline in this field through loans to private industries for the enlargement of plants so that fresh-frozen fillets for export might be substituted for salt cod.

New plants were expected to be set up soon at Placentia, Grand Bank, and Gaultois. Owners of plants at St. Anthony and Bonavista were being urged to double their capacity.

The Premier outlined a ten-point plan for fisheries expansion program, wherein more unionization and cooperation between fishermen themselves and the government would be possible.

The Premier earlier in the year called in some 200 fishermen delegates from all parts of Newfoundland in an effort to have them organize and deal realistically and efficiently with their own and market needs.

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NEWFOUNDLAND SALT COD SALES TO EUROPE: Dollar payment for the sale to Europe of C\$4,000,000 worth of Newfoundland's 1951 salt cod production has been arranged by the Canadian Government, a May 18 American Embassy dispatch from Ottawa states. Purchases of this product by Spain, Portugal, Italy, and Greece will be paid in pound sterling to the Canadian Government. The Canadian Treasury will pay the Newfoundland shippers in Canadian dollars. Under this plan, the sterling will be applied against Newfoundland's debt to the United Kingdom, which the Canadian Government took over at Confederation in 1949.

Under a similar plan for 1950,^{1/} the limit permitted was C\$6,000,000, but sales for that year only amounted to about C\$4,000,000, the same amount proposed for this year. Canadian Government officials stated that this 1951 amount will cover between 35 and 40 percent of the Province's salt-cod production.

This continued arrangement is only a temporary solution to the problem of disposing of the Newfoundland fish production pending a Government reorganization of the fisheries now being worked out. Under this reorganization, new filleting and freezing plants are contemplated.

^{1/}SEE COMMERCIAL FISHERIES REVIEW, AUGUST 1950, P. 42.

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NEW ROSEFISH GROUNDS IN ATLANTIC: Exploration by the Fisheries Research Board of Canada of 1,000 miles of deep water, extending from the northern part of the Grand Bank northward to the latitude of Cape Chidley at the northern extremity of Labrador, uncovered in 1950 new rosefish (ocean perch) grounds for Canadian fishermen, the Canadian Fisheries Department Trade News of January 1951 announced.

This discovery by biologists of the Newfoundland Biological Station aboard the exploratory vessel Investigator II increases by 600 nautical miles the known range in which rosefish can be caught in sufficient numbers to make commercial fishing profitable.

Excellent catches were made with the vessel's small otter trawl. Much larger catches could be taken with the bigger nets of the commercial trawlers. The net used by the Investigator was a No. 36 otter trawl with a 60-foot headrope and an 80-foot footrope. Usually about 450 fathoms of towing warp were used in all depths of 150 fathoms and over, while the ratio of 3 to 1 was maintained in lesser depths. A good deal of the Investigator's efforts was directed toward deep water between 100 and 200 fathoms.

Known catches of rosefish per hour's drag ranged from 3,000 pounds to 20,000 pounds. On one occasion the trawl net broke with the weight of the fish. This catch, which was lost, was estimated at 30,000 pounds. Since the Investigator was exploring new depths, it did not remain to fish continuously in the areas found suitable.

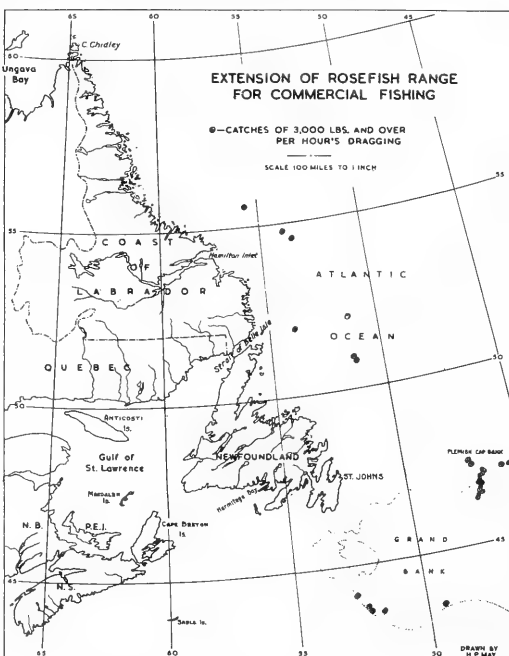
Good stocks of rosefish were found at the Flemish Cap Bank and in most areas fished from the north-eastern edge of the Grand Bank to near Hamilton Inlet Bank. These northern rosefish are much larger than those to the south of the bank and the big catches were of large fish of excellent commercial size.

Before last year's explorations, the known availability of rosefish extended only to latitude $44^{\circ} 30'$. The commercial range for this fish is now extended northward to $55^{\circ} 21'$, more than 600 nautical miles and about 11 degrees of latitude. A few rosefish were found in deep water as far north as latitude $60^{\circ} 30'$.

During the spring of 1950, explorations revealed large catches of rosefish on the southwest edge of the Grand Bank especially at depths of about 80 to 85 fathoms. These rosefish were, however, too small for present-day commercial use in Newfoundland, although they are as large as those used in the United States. Fish caught in the northern limits of the rosefish grounds were taken from a greater depth than those farther south. On the southern part of the Grand Bank it was sometimes possible to catch large quantities of rosefish in 80 to 90 fathoms. In Hermitage Bay, on the south coast of Newfoundland, fish were caught in quantity at 140 fathoms. On the northeast edge of the Grand Bank and Flemish Cap the favored depths are from 150 to 190 fathoms with the best catches at 160 to 190 fathoms. Off Labrador the fishing depth for the best catches was as much as 200 fathoms. Catches taken at depths less than these were considerably smaller.

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NOVA SCOTIA EXPANDS FROZEN FISH PRODUCTION: The present trend of the Nova Scotian fishing industry is away from salt fish to the production of fresh and frozen fish for export, principally to the United States, and for sale on a broadening Canadian market, states an April 27 American consular dispatch from Halifax. This trend appears to derive partly from the chronic instability of traditional sterling markets in the Caribbean region and partly from gradual realization that the Province's prime competitive advantage lies in nearness to the currently most



productive fishing grounds in the western Atlantic, a geographic location turned to greatest commercial advantage by emphasis on quality production, especially with Newfoundland's entry into the Canadian Federation.

The construction of the \$4.5 million plant at Louisburg by a Canadian and an American fishing firm, and another American firm's development at Petit de Grat are indications of the extent to which United States firms with sufficient resources to afford the renovation of operating equipment have been prepared to accept the opportunities offered by establishment of branch fishing operations in Nova Scotia.

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NOVA SCOTIAN SHIPYARD FACILITIES CONTRIBUTING TO DEVELOPMENT OF FROZEN FISH INDUSTRY ON EAST COAST: Nova Scotian shipyard facilities for construction of small craft are making an important contribution in a considerable shift which is taking place in the eastern Canadian fisheries from the production of salt fish to the production and marketing of fresh and frozen fish. An element in this change of emphasis is the ability of Nova Scotian industry to develop and construct improved types of fishing vessels to meet changing standards and requirements, a May 4 American consular dispatch from Halifax states. The staple salt cod trade has dropped in value of production mainly because men and equipment in this fishery are being devoted to more profitable activities, such as the fresh halibut fishery.



China (Communist Mainland)

FISHERIES PRODUCTION TARGETS SET FOR 1951: The second All-China Marine Product Conference adjourned on January 30 after an 11-day session, states an American consular dispatch from Hong Kong dated March 30. (The report points out that the data presented are almost entirely from the Communist party platform.) The conference decided that efforts shall be exerted to restore the prewar annual production level of 1,500,000 metric tons within a period of two years. The 1951 production target was set at 1,100,000 tons or about 21 percent above the 1950 output of 911,000 tons.

Production targets for 1951 by regions are: East China region 500,000 tons; Central South region 360,000 tons; Northeast region 140,000 tons; Hopei and Tientsin Municipality 100,000 tons.

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GOVERNMENT LOAN FOR FISHING INDUSTRY: The Chinese Ministry of Agriculture and the People's Bank of China have recently released a loan of JMP ¥80.9 billion (US\$2,895,368) to the fishing industry for 1951, an American Consular dispatch dated April 20 from Hong Kong reports. (This report points out that the data presented are almost entirely from the Communist party sources.) The loan will be issued to the following sources:

1. ORGANIZED FISHERMEN AND THOSE ENGAGED IN RAISING FRY AND POND FISH.
2. FISHERMEN IN NEED OF FINANCIAL ASSISTANCE FOR GEAR REPAIRS.
3. STATE-OPERATED MARINE-PRODUCTS COMPANIES, AND MARINE-PRODUCTS TRANSPORTATION AND MARKETING COMPANIES.

4. PROCESSING, MARKETING, AND TRANSPORTING MERCHANTS AND DEALERS.
 5. PRIVATELY-OPERATED FISHING VESSELS.

NOTE: MONETARY CONVERSION FACTORS: JMP ¥4,750 IS EQUAL TO \$1 HONG KONG, WHICH IS EQUAL TO 17 U.S. CENTS.



Colombia

FISHERY PRODUCTS PROHIBITED IMPORTATION: A new Colombian exchange-control system instituted by Decrees Nos. 637 and 638 of March 20, 1951, effective immediately, also prohibits the importation of a long list of commodities, including fishery products, the U. S. Department of Commerce reported in April. The list of prohibited imports will be subject, however, to modification by recommendation of the newly-created Exchange Regulation Board, as conditions warrant. The following lists the fishery and allied commodities prohibited importation, as established in decree No. 638 (follow the classification of the Colombian customs tariff):

TARIFF NUMBER	DESCRIPTION
19	FRESH FISH (ALIVE OR DEAD) OR FISH PRESERVED IN A FRESH STATE BY REFRIGERATION OR OTHER METHOD: (B) SALT-WATER FISH
20	SIMPLY SALTED, DRIED OR SMOKED FISH
21	CRUSTACEANS AND MOLLUSKS, FRESH, SIMPLY COOKED OR SALTED: (A) LOBSTER, CRABS, CRAYFISH, SHRIMPS AND OTHER CRUSTACEANS (B) OYSTERS, CLAMS, SNAILS AND OTHER MOLLUSKS
119	CAVIAR AND CAVIAR SUBSTITUTES
120	PREPARED AND PRESERVED FISH OTHER THAN THAT INCLUDED IN ITEM 20: (A) IMPORTED IN BOXES, CROCKS OR HERMETICALLY SEALED CONTAINERS: (1) SARDINES (2) OTHERS (B) IMPORTED IN OTHER FORMS
121	PREPARED AND PRESERVED CRUSTACEANS AND MOLLUSKS OTHER THAN THOSE INCLUDED IN ITEM 21
957	NATURAL CORAL, WORKED (A) UNMOUNTED (B) MOUNTED
958	TORTOISE SHELL: (B) ARTICLES OF TORTOISE SHELL
959	MOTHER-OF-PEARL: (B) ARTICLES OF MOTHER-OF-PEARL
980	ROD-FISHING SUPPLIES
981	ORDINARY BUTTONS FOR WEARING APPAREL AND FOR DECORATION: (A) OF COAL, TORTOISE SHELL, IVORY, AMBER OR JET (B) OF MOTHER-OF-PEARL

The new exchange-control system initially sets a new exchange rate of 2.50 pesos per United States dollar (buying rate) and 2.51 pesos per dollar (selling rate) by the Bank of the Republic for all foreign exchange payments. The stamp tax on exchange transactions is 3 percent, which results in an effective selling rate for exchange for general importations of 2.585. Decree No. 637 provides that, with the exception of articles prohibited by the Government, exports and imports of merchandise may move freely. However, all exports and imports will require prior registration in the Office of Exchange Registration, and proof of registration will be required for the legalization of shipments by Colombian Consulates and for entry through the customs. A guarantee deposit of 10 percent of the value of each import registration is required, and a receipt for this deposit is a prior requisite for registration. Imports and exports which require prior authorization of a Ministry will continue subject to this requirement.

Costa Rica

FISHERIES TRENDS, 1950: No data are available on Costa Rican production of fishery products, but reports indicate that the amount is rather small.

Exports: Shipments (actually re-exports) of frozen tuna to the United States, the sole receiver, amounted to 4,486 metric tons in 1950, valued upon entry into Costa Rica at US\$980,000, according to an American Embassy dispatch from San Jose dated April 5, 1951. The 1950 tuna exports were greater than those reported in 1949 (4,101 tons, valued at US\$888,000).

No information is available on the total tuna pack in Costa Rica but 64 tons, valued at US\$88,000 were exported chiefly to Venezuela and the Canal Zone in 1950 as compared to 68 tons, valued at US\$97,000, sent chiefly to the same destinations in 1949.

Also, 3.6 metric tons of shark livers, valued at US\$2,500, were shipped, all to the United States, as compared with 42 tons of shark and fish livers, valued at US\$41,000, in 1949. These shipments are believed to be re-exports as practically no livers are known to have been produced in Costa Rican waters.

Exports of live turtles amounted to 91.6 metric tons, valued at US\$3,980, as compared to 89 tons, valued at US\$6,400 in 1949.

Fishing Regulations: Rules and regulations for the fishing industry now in effect appear satisfactory to the fishing fleet operating out of Costa Rica, which consists almost entirely of foreign vessels. This fleet utilizes the facilities of Puntarenas, the only fishing port in Costa Rica.

Territorial Waters: In December 1950 Costa Rica's highest court ruled that the country's sovereignty extends only to the internationally accepted three-mile limit.^{1/} The legality of legislation which extended protection over a 200-mile offshore belt has not yet been submitted to the courts nor has that legislation been clarified.

^{1/}SEE COMMERCIAL FISHERIES REVIEW, FEBRUARY 1951, PP. 51-2.



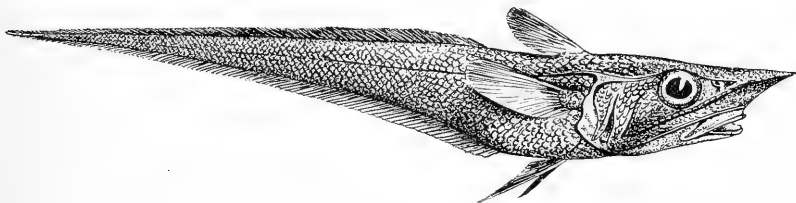
Denmark

DEEP-SEA TRAWLING INVESTIGATION EXPEDITION: A Danish elaborately-equipped deep-sea scientific expedition has reported trawling operations at a depth of 15,000 feet (2,500 fathoms), according to the March 1951 issue of the South African Shipping News and Fishing Industry Review. With modern equipment designed to plumb the greatest depths, these deep-trawling operations were carried out between 150 and 200 miles southeast of Durban, South Africa, and are reported to have produced remarkable results. Progressively lesser depths were trawled as the vessel (the Galathea) worked stations nearer to the African coast. Specimens, which may be new to marine science, were secured from this area, which is believed to have never been fished before.

The specimens consisted of a number of eels up to four feet in length and two small bottom fish (among the rarest known to marine biologists). The eels had been obtained from the greatest depth fished to date by this expedition, and at a depth from which eels had never before been obtained. The two bottom fish (small, pale,

queer-shaped, a creamy white in color, and without eyes) were rated the most valuable scientific specimens taken up to this stage of the expedition. There are ten known specimens of the one type and it is thought there may be five of the other yet both specimens were brought up in the same trawl.

Also from the same area, the expedition caught the largest complete specimen of a deep-sea squid which has been obtained. Scientists aboard consider it three times larger than any specimen at present in their possession. A huge, red deep-sea prawn nearly nine inches in length was also brought up.



RATTAIL-TYPE OF FISH TAKEN IN DEPTHS OF 5,000-6,000 FEET OFF THE WEST AFRICAN COAST BY THE GALATHEA. THESE FISH ARE BOTTOM FEEDERS.

The primary object of the Galathea's deep-sea expedition is to carry out research work in the unexplored deep waters of the world. To this end Danish scientists have devised special equipment which would enable them to trawl at more than 35,000 feet (5,833 fathoms) below the surface.

Over one-third of the world's surface is covered by water more than 12,000 feet (2,000 fathoms) deep and is still a virtually unexplored area. Below 24,000 feet (4,000 fathoms) nothing is known and it is in these areas that the expedition is seeking its principal field of operations. The greatest depth in which they hope to operate will be in the 36,000-foot "hole" in the area of the Philippines for which a specially designed cable would be shipped out to Singapore. In the Indian Ocean it was not thought likely that operations below the 15,000-foot level would be undertaken.

The Galathea expedition, which is scheduled to call at 66 ports scattered all over the world will take about two years but it will be several years probably before the scientists complete a report of their findings.

From Durban the Galathea will work up the Mozambique Channel. The deepest areas are being sought as the vessel slowly makes its way across the Indian Ocean towards the Pacific where it will operate in the greatest depths. The expedition is due back in Denmark in the latter part of 1952.

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FISHING CUTTERS FOR MEXICO: Negotiations in regard to the export of Danish fishing cutters to Mexico in order to assist the latter country to build up its fleet are under way, according to a report in the April 13 issue of Dansk Fiskeritidende. The vessels involved are of wood and of large size.

* * * * *

U. S. MARKET SOUGHT FOR FROZEN FILLETS: The Union of Danish Fish Fillet Factories (Sammenslutningen af danske Fiskefiletfabriker) is attempting to develop a market in the United States for high quality frozen fish fillets, such as cod and flounder. The fillets would be packed in 1- or 5-pound cartons with quantities available depending on the catch, according to an American Embassy dispatch from Copenhagen.

The Union is an association of 18 Danish producers of fish fillets whose principal objective is to promote the export of Danish fish products.



Egypt

CERTAIN FISHERY PRODUCTS EXEMPTED FROM DUTY: Further revisions have recently been introduced in the Egyptian Customs Tariff, a May 11 American Embassy dispatch from Cairo reports. Effective April 26, 1951, certain imported fishery products have been exempted from payment of the regular customs duty under this revision. The supplemental ad valorem duty has also been reduced from 7 percent to 1 percent. Included are the following tariff classifications of the Egyptian Customs Tariff:

TARIFF NO.

ARTICLE

15

FISH, FRESH (LIVING OR DEAD) OR PRESERVED FRESH BY A FRIGORIFIC PROCESS.

16

FISH, SIMPLY SALTED, DRIED, OR SMOKED.

117

FISH, CRUSTACEANS AND MOLLUSCS, IMPORTED IN TINS, JARS, FLASKS, OR HERMETICALLY SEALED CONTAINERS:

(A) FISH:

(1) SALMON

(2) SARDINES

(3) TUNNY

(4) OTHER, INCLUDING PILCHARDS AND HERRING, ETC.

However, canned crustaceans and molluscs imported into Egypt are still subject to duty.



German Federal Republic

ELECTROSTATIC SMOKING OF SARDINES: A German firm in Lübeck has announced its intention to place a device for the continuous electrostatic smoking of sardines on the market within a few months, according to the February 1951 issue of Konserves, a Danish canning periodical. This announcement was made a few months after the second of these cookers had been installed by a Danish firm for treating clupeid fishes packed raw in cans. The smoker is meant to be assembled immediately after the cooker.



Greece

DUTY-FREE IMPORT PERMITTED FOR FISH OILS: As a result of the small crop of olive oil this year, and in order to keep prices of olive oil from rising further, the Greek Government has taken a series of measures. Included among these measures is one that will permit the duty-free import of edible seed oils and fish oils, intended for the requirements of the Greek State, until August 31, 1951, reports the Canadian periodical Foreign Trade, dated February 17.



Hong Kong

REVIEW OF THE FISHERIES, 1950: Marketing of Fish: The amount of fresh and salt-dried fish marketed (see table) in Hong Kong increased during 1950 and there was a considerable export of fish fry, an April 4 American consular dispatch from Hong Kong reports. The increase was mainly in fresh fish. The amount of fresh fish marketed in the Colony during 1950 was 51.8 percent greater than in 1949.

Marketing of Fresh & Salt-Dried Fish in Hong Kong (Quantity & Wholesale Value), 1951						
	Fresh Fish			Salt-Dried Fish		
	Quantity	Wholesale Value		Quantity	Wholesale Value	
	Metric Tons	HK \$	U.S. \$	Metric Tons	HK \$	U.S. \$
1950	16,425	24,414,750	3,875,357	16,304	13,873,411	2,202,129
1949	10,822	17,689,028	2,776,927	16,109	18,740,370	2,941,973

Practically all of the fresh fish and forty percent of the salted and dried fish is consumed locally; the remainder goes to China.

The main types of fish landed in Hong Kong are mackerel, shad, anchovies, lizard fish, golden thread, croaker, and yellow croaker.

There was also an export during 1950 of 880,090 fish fry valued at HK\$64,115 (US\$10,177). The fry are brought in from the East River in Kwangtung to Hong Kong where they are packed in hermetically-sealed 4-gallon cans for further shipment to Malaya, Thailand, and Formosa.

Most of the wholesale marketing of the local fish caught is done by the Fish Marketing Organization, with the exception of pond and shellfish. The Organization collects the fish in depots in the fishing villages and transports them in launches to the markets. A charge of 6 percent of the wholesale price is made to cover the costs of handling and marketing. It is hoped that this enterprise will eventually be taken over as a cooperative undertaking by the fishermen.

Fishermen and Fishing Fleet: It is estimated that during 1950 about 60,000 persons were engaged in the fishing industry, which is essentially owner-operated. Junks and sampans are the major types of boats used. Since the typhoon season from July through September compels wind-driven craft to tie up, there is a strong motive for mechanization. This was reflected in an increase of mechanized vessels in 1950 from 55 to 111. This increase was particularly seen in the native types of boats, such as the wooden long-liners and the fish collectors. Even the smaller boats, such as the purse seiners, are obtaining small engines suitable for their craft.

The Government is also lending a hand in the process of developing a new vessel based on present types which will be adaptable to motor power. A Colonial Development Grant has been obtained to cover the necessary research required to design a vessel, similar to a junk, which will be capable of self-propulsion.

NOTE: ALSO SEE COMMERCIAL FISHERIES REVIEW, MAY 1950. P. 66.

VALUES CONVERTED ON THE BASIS OF HK\$6.30 = US\$1.00 FOR 1950; AND HK\$6.37 = US\$1.00 FOR 1949. (THESE EXCHANGE RATES ARE THE AVERAGE OF THE HIGH AND LOW PREVAILING EXCHANGE RATES FOR EACH OF THESE YEARS.)



Iceland

FOUR OF TEN NEW TRAWLERS BEING BUILT BY BRITISH SHIPYARDS DELIVERED: Four of the ten new trawlers ordered by Iceland in British shipyards in 1948 have now been delivered. The remaining six trawlers are expected to arrive before the end of the summer, reports a May 29 American consular dispatch from Reykjavik.

Eight of the ten trawlers, including the four already delivered, are steam-powered. The other two will be Diesel-powered. The steam trawlers are similar to a number of trawlers which were delivered to Iceland from the United Kingdom in 1947-49. The new steam trawlers are 198' 9" long, 30' broad, 16' deep, and of about 700 gross metric tons. They have two holds for fish, totaling 18,190 cubic feet. They are fitted with seven fuel-oil tanks, totaling 235 metric tons; three Diesel-oil tanks, totaling 18 tons; ten water tanks, totaling 70 tons; and four fish-oil tanks totaling 32 tons. They have triple-expansion main engines rated at 1,000 h.p. at average speed, and 1,400 h.p. maximum. Diesel auxiliaries consist of two units of 120 h.p. each and one unit of 30 h.p. The vessels are fitted with modern radio equipment, echo sounders (two units each), and radar.

Each trawler is fitted with fish-meal and herring processing equipment, capable of reducing 25 metric tons of raw material daily--they are the first Icelandic trawlers to have fish-reducing equipment. Each trawler has living accommodations for 38 persons.

They are expected to operate with a crew of 32-33 when fishing for fish to be delivered fresh abroad, or for fish to be delivered in Iceland for quick-freezing or for reduction into meal and oil; when fishing and salting the catch for delivery in Iceland, the crew will number 38-40 persons.

One of the new steam trawlers, Olafur Johannesson, recently ran successful trials off Aberdeen, Scotland. It is of modern design with a forecastle, raked stem, flared bow, cruiser stern, and streamlined fin and rudder, and has a large fish room with a cooling plant.

There is a quick-freeze plant and insulated cold storage compartment where filleted fish are frozen and suitably wrapped in a paper covering ready for distribution ashore. The steam fish-meal plant is capable of handling 25 tons of fish offal in 24 hours. A separate compartment is allocated for the stowage of this fish meal. A cod-liver oil plant consists of five boilers in a house aft and it is fed by a hopper at the cutting ponds. Provision is made for the stowage of 32 tons of liver oil.

Deck equipment includes a steam trawl winch carrying two 1,000-fathom warps, electric windlass, and electric and hand hydraulic steering gear controlled from the wheelhouse by a telenotor. Two lifeboats fitted aft operated by mechanical davits are also part of the equipment.

Radar and other navigational aids, including wireless and two echo sounders are installed. Mechanical ventilation is provided for the 38-man crew. The vessel is propelled by means of a triple-expansion engine, developing 1,200 i.h.p. and uses superheated steam.

NOTE: SEE COMMERCIAL FISHERIES REVIEW, APRIL 1951, P. 58.



Indonesia

FISHING FLEET EXPANSION PLANNED: "Second in importance (to Agriculture) is the problem of greatly declined fish production," the newly-appointed Indonesian Minister of Agriculture stated in a press interview early in May, states a May 16 American consular dispatch from Djakarta. "To raise fish production," he continued, "our fishing fleet will be expanded with 300 boats, partly to be imported from abroad and partly to be constructed by Indonesian ship-building industries. With this increase it is hoped that Indonesian production of fish for home consumption will be raised each year. There were 40,000 fishing perahus in Indonesia before World War II, compared with only about 25,000 at present."

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SEA-FISHERIES EXPANSION PROGRAM STARTED: The expanded Indonesian sea-fisheries program is now expected to show steady progress with the arrival of the first two of 20 fishing boats purchased from Japan with ECA funds. Reports indicate that fish production will be stepped up 300-400 metric tons annually, according to an April 17 American consular dispatch from Djakarta.

NOTE: SEE COMMERCIAL FISHERIES REVIEW, APRIL 1951, PP. 58-9.



Japan

AGRICULTURE, FORESTRY, AND FISHERIES LOAN LAW ENACTED: The Japanese Fisheries Agency, Ministry of Agriculture and Forestry, has advised the Natural Resources Section that the Agriculture, Forestry, and Fisheries Loan Law (Law No. 105 of 1951) and the Agriculture, Forestry, and Fisheries Loan Special Account Law (Law No. 106 of 1951) were enacted by the Diet March 31, 1951. Both laws became effective April 1, 1951, states the April 7 Weekly Summary of SCAP's Natural Resources Section.

Under the provisions of Law No. 105, the government may, within budgetary limits for each fiscal year, lend funds on a long-term basis to individuals or juridical persons for specified improvement projects in agriculture, forestry, and fisheries. In regard to fisheries the loan funds will be available for repair of fishing ports and for construction, repair, or purchase of facilities to be utilized jointly by fishermen. Loans for fishing port repair will involve interest rates of 6-7 percent, and are obtainable on a 15-year term basis. Loans to fisheries cooperatives for fishing ground development in Hokkaido, and for ice-making and freezing facilities also may be obtained on a 15-year term, at 7-8 percent interest.

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COASTAL FISHING FLEET REDUCTION PLAN BEING REALIZED: During April this year the Japanese Fisheries Agency announced that the planned reduction in the coastal fishing fleet, part of the five-point proposal for rationalization of the fishing industry, would be accomplished through national indemnification of large numbers of trawlers, declares a May 14 American consular report from Tokyo. The agency an-

nounced that after April no new trawlers would be licensed; in the next five years approximately 17,100 of a total of 35,000 trawlers would be withdrawn from fishing operations.

It is estimated that owner indemnification would total about ¥8,060,000 (about US\$22,390), and that approximately 500,000 persons including family members, would be displaced vocationally. This program would effect the trawler fleet only, and as yet is still in the planning stage, no money having been appropriated for the plan and no formal legislation submitted.

EAST CHINA AND JAPAN SEAS TRAWLERS DISCIPLINED BY GOVERNMENT: The Fisheries Agency in April ordered a ten-day cessation of operations by some 800 trawlers fishing in the East China and Japan Seas. The halt was called because of a recent large increase in the number of violations of the so-called MacArthur Line, beyond which Japanese fishing vessels are not permitted to operate, and the Agency believed that this action was necessary as a disciplinary measure.

Although the restriction was opposed by representatives of the fishing industry, the Agency stood firm, indicating the Government's concern over increasing friction between Japan and neighboring countries over Japanese violations of area limits established by SCAP.

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FISH-LIVER OIL INDUSTRY, 1950: Production: The Japanese Ministry of International Trade and Industry (MITI) estimates fish-liver production, chiefly from

Japanese F.O.B. Export Prices of Fish-Liver Oils			
Potency (U.S.P. XIV)	Low	High	Average
..(Units Per Gram)..	(Per Million Units in U.S.\$)		
5,000 down	.055	.105	.0871
5,000 up	.06	.115	.0828
10,000 "	.07	.1175	.0876
20,000 "	.0772	.0975	.0912
30,000 "	.0675	.095	.0875
40,000 "	.09	.1025	.0952
50,000 "	.0975	.105	.1016
60,000 "	-	-	.09
70,000 "	-	-	.1125
80,000 "	.1125	.12	.1171
90,000 "	.102	.1175	.1105
100,000 "	.095	.125	.1177
110,000 "	.095	.1275	.1172
120,000 "	.1162	.1225	.1179
130,000 "	.10	.105	.102
140,000 "	-	-	.1175
150,000 "	-	-	.1250
200,000 "	-	-	.1425

shark, cod, tuna, and bonito, totaled 1,160 metric tons in 1948; 3,100 metric tons in 1949; and 12,620 metric tons in 1950, a May 11 consular dispatch from Tokyo points out. From the raw fish livers, Japan produced 131 metric tons of oil in 1948; 1,176 metric tons in 1949; and 3,957 metric tons in 1950.

MITI estimates that about 70 metric tons of fish-liver oil were consumed in 1950 for the production of approximately 10.5 metric tons of concentrates with an average potency of 100,000 U.S.P. per gram.

Production Potential:
The Japan Vitamin Oil Industry Association states that

1950's fish-liver collection of 12,620 metric tons is considered a maximum production with Japan's present organization for collecting fish livers. MITI reports that actual capacity for fish-liver oil production amounts to 18,000 metric tons a year, although only one-fifth of this capacity is in operation at present.

It is roughly estimated by MITI that producers could process approximately 210 metric tons of fish-liver oil a year in the manufacture of concentrates.

Obstacles to Production Expansion: According to both MITI and the Japan Vitamin Oil Industry Association, there are three major obstacles to production expansion: poor organization in the collection of fish livers, present limitations on fishing areas, and the size of the catch of fish.

Domestic Requirements: Domestic consumption of fish-liver oil is small, it being estimated at less than 500 metric tons a year. The greater part of the oil is exported. The consumption of fish-liver oil for the manufacture of concentrates is about 70 metric tons a year, but demand is increasing and is expected by MITI to reach 120 metric tons in the near future.

Exports to the United States: According to MITI statistics, Japan in 1950 exported 196 metric tons of shark livers as such, and 3,600 metric tons of fish-liver oil to the United States. The Ministry estimates that the same volume of exports will continue in 1951 and 1952, if no unfavorable situation arises. Statistics of Japan's exports of fish-liver oil concentrates are not available.

Japan is exporting fish livers to the United States only. Almost all of Japan's fish-liver oil exports are also taken by the United States. In 1950, four metric tons of fish liver oil were exported to Sweden, Norway, and Western Germany.

Export Prices: Japanese f.o.b. export prices for shark livers ranged from US\$0.35 to \$0.40 per pound in December 1950. Export prices of fish-livers in December 1950 are shown in the table on page 70.

Quality of Products Being Exported to the United States: The strength of the fish-liver oil being exported to the United States ranges from below 5,000 U.S.P. to 200,000 U.S.P. units per gram.

NOTE: SEE COMMERCIAL FISHERIES REVIEW, AUGUST 1950, PP. 46-8.

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SENATOR WARREN G. MAGNUSON DISCUSSES JAPANESE FISHERIES PROBLEMS: U. S. Senator Warren G. Magnuson held meetings with representatives of SCAP's Natural Resources Section on April 8 and 11 to discuss various aspects of Japanese fisheries, reports that agency's April 14 Weekly Summary. In particular, proposed fisheries agreements between Japan and the United States, which are expected to be concluded after the general peace treaty with Japan is signed, were discussed.

At the first meeting, representatives of the Japanese Fisheries Agency and the fishing industry were introduced to the Senator. In a later meeting, members of the Japanese fishing industry stated their willingness to support the proposed fisheries agreements as outlined in the letter dated February 7, 1951, to Ambassador John F. Dulles from Prime Minister Shigeru Yoshida.

SIXTH AND SEVENTH MOTHERSHIP TUNA EXPEDITIONS: Main elements of the sixth Japanese mothership-type tuna expedition to the waters adjacent to the U. S. Trust Territory of the Pacific left Japan April 10-13.

The expedition is a small one designed to operate for only 30 days. This fleet will be attached for administration and control purposes to the fifth expedition now operating in the area.

The sixth expedition consists of the mothership, the 500-gross ton Tenryu Maru; a carrier, the Tosui Maru; one patrol vessel; and eight catcher boats. Two dory-catchers are carried to and from the fishing grounds on the deck of the mothership.

The expedition expects to operate in the vicinity of 03° N. latitude and 157° E. longitude. The period of operation will be from about April 22 to May 22, 1951.

Estimates are that about 1,300,000 pounds of tuna, spearfish, and sharks will be caught and returned to Japan for domestic consumption. As no quick-freezing equipment is available it is unlikely that any of the products will be suitable for export purposes.

Reports indicate that another expedition was being prepared for departure early in June. This is the seventh expedition since May 11, 1950, when the Commander-in-Chief Pacific and U. S. Pacific Fleet and the High Commissioner Trust Territory of the Pacific Islands, and SCAP permitted strictly supervised fishing for tunas by Japanese mothership expeditions in defined areas north of the Equator. This expedition, which is expected to operate at sea for 3 or 4 months, will consist of a 10,000-metric-ton mothership which will freeze the catch, and about 25 catcher vessels. About 700 fishermen and other workers will accompany the fleet.

JAPANESE GOVERNMENT



Mexico

CANADIAN SHIPYARD COMPLETED SIX OF ELEVEN MEXICAN SHRIMP DRAGGERS: The first six of eleven 58-ft. shrimp draggers being built by a Nova Scotian shipyard for a shrimp firm in Matatlan, Mexico, were completed and the delivery voyage commenced early in April, according to a May 4 American consular dispatch from Halifax, Canada. The C\$350,000 contract was awarded the Canadian shipyard through a United States brokerage firm which, according to recent press reports, had been requested by the Mexican company to supply a fleet of vessels in an attempt to put Mexican shrimp production on an industrial basis.

Specifications for the Mexican draggers are summarized as follows:

LENGTH, 58 FT; BREADTH, 16-1/2 FT; HEIGHT (DEPTH UNDERSIDE OF DECK), 6-1/2 FT; TONNAGE, 39.19 TONS.
CONSTRUCTION: KEEL--BIRCH; HULL--BIRCH; PLANKING--SPRUCE; DECK--SPRUCE.
DECKHOUSE (FLYING BRIDGE ON ROOF): OF 3/4" PLYWOOD, PLACED WELL FORWARD TO LEAVE AFTER END FOR DRAGGING OPERATION AND FISH HOLD; CONTAINS BRIDGE AND COMPANIONWAYS TO ENGINE ROOM AND CREW'S QUARTERS BELOW DECK.
FISH HOLD: INSULATED WITH GLASS WOOD, LINED WITH GALVANIZED SHEET IRON, WHICH IS COATED WITH WHITE CEMENT.
MAIN ENGINES: HEAVY DUTY, DEVELOPING 85-100 B.H.P. AT 450 R.P.M.
AUXILIARIES: 6 H.P. DIESEL MARINE.
WINCHES: TRIPLE-DRUM HOISTS POWERED BY TAKE-OFF FROM MAIN ENGINES.
PROPELLERS: MANGANESE BRONZE, 42" DIAMETER BY 30 PITCH.
SHAFTS: COLD-ROLLED STEEL, SERVED WITH COTTON TAPE AND TALLOW, AND BOUND WITH MARLIN.
FUEL TANKS: TWO, GIVING EACH BOAT TOTAL CAPACITY IN EXCESS OF 1,500 IMPERIAL GALLONS.

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GUAYMAS SHRIMP INDUSTRY FACES NEW DIFFICULTIES: During the first part of the year, 15 to 18 Guaymas boats (including 4 freezer boats) were fishing in the Salina Cruz area, according to a May 7 American consular report from Guaymas, Mexico. One of these freezer boats has already packed and frozen approximately 110 tons since leaving Guaymas in early March, while two other freezer boats have stored an additional 25 tons of packed and frozen shrimp in a period of three weeks of operation.

An April 11 Mexican newspaper report stated that several operators had decided to tie up their boats, since further shrimp fishing was deemed uneconomical and the

catch didn't consist of the same type as caught in past years. A shrimp-plant official stated that additional shrimp boats may be removed from fishing, and plant owners were talking of closing the season as of the end of May.

The financial status of the industry was made more critical when the banks virtually stopped all credit to the shrimp industry. The shrimp packing and freezing plants are seeking aid from the Mexican Government. Three plants have solicited loans from the Financiera Nacional, which has sent an auditor and consulting engineer to make a complete investigation and report of the shrimp industry. A prior survey was made in April by a commercial investigator of the Bank of Mexico. Should the Financiera grant long-term loans of the amount requested, it is reported that the plants would be deprived of much of their present independence and possibly of the freedom of negotiating with U. S. firms directly in the distribution and sale of shrimp products.

The industry on April 24, 1951, made a second appeal to the President of Mexico to give it relief from the high Mexican export tax on shrimp but no word has been heard as yet of the outcome of the audience granted them.



New Guinea

TECHNICAL ASSISTANCE REQUESTED FOR TWO FISHERY PROJECTS: In order to develop fishing projects, two companies in New Guinea have requested technical assistance from the Australian Ministry of Commerce and Agriculture, reports that agency's February 1951 Fisheries Newsletter. In January this year Australia sent an Assistant Technical Advisor to New Guinea for a period of about three months.

One company, located on Kwato Island, two miles west of Samarai, Papua, stated that it plans to develop fishing, not only to improve the natives' diet, but also in order to produce canned fish for export to the United States. This company reports that if a cannery is established, it may be owned cooperatively with the natives. It plans to use the profits to purchase rice-growing and bag-making machinery and for the benefit of the natives. Australia has already sent this company materials for making a 150-ft. lampara net, surface gill nets, bottom grab-all nets, and long lines. In addition, the company is outfitting a 52-ft. ketch with which it intends to begin exploratory fishing. The possibility of developing a crayfish or spiny lobster fishery will also be investigated.

The Advisor took with him a small otter trawl of his own make with which he hopes to do some experimental trawling. He plans to operate the net with the winch over the stern of the ketch.

The second company which requested technical assistance, located in Port Moresby, hopes to produce and export crayfish or spiny lobster tails, fillets, and canned fish.



Norway

HERRING FACTORY SHIP TO FISH OFF MOROCCO: The Norwegian herring oil and meal factory ship Clupea and four purse seiners will depart for Morocco in mid-June to engage in the sardine fishery off that coast, according to the May 9 issue of Fiskaren, a Norwegian trade periodical. The purse seiners, which range up to 100 feet in length also will carry trawl gear in order to test this method of fishing.



Panama

FEES INCREASED FOR BAIT-FISHING VESSELS: The Panamanian Government on April 27 signed a new decree (No. 150) making certain changes in Decree No. 108 of January 18, 1950, regulating bait fishing in Panamanian Pacific coastal waters, reports an April 30 American consular dispatch from Panama City.

Henceforth, bait-fishing vessels in excess of 150 tons will pay an annual license fee of US\$1,500 instead of US\$1,000. Most of the boats are reportedly of the 150-ton class. Fees for smaller boats are increased about the same proportion. Beginning in 1952, the bait-fishing season will run from March 15 to November 30 of each year, instead of as heretofore from April 15 to December 31; but during the current season, fishing will be permitted from April 28, 1951, to January 14, 1952.

NOTE: ALSO SEE COMMERCIAL FISHERIES REVIEW, APRIL 1951, P. 63.



Ryukyu Islands

REHABILITATION OF THE FISHERIES: Levels of rehabilitation for Ryukyuan fisheries, following the destruction of their productive capacity during World War II, have been determined by diet requirements of the island population for fish, their principle source of animal protein foods. In addition, exports of marine products are projected in an amount sufficient to pay for imported fisheries supplies necessary to maintain production. An annual production of 50,000,000 pounds is projected as the required level of development for food and export.

Reconstruction is being accomplished through the importation of fishing gear, ice plants, vessels, and vessel construction and repair supplies. These are imported chiefly from Japan and conform to specifications and types which can continue to be replaced from Japanese sources. Imports are sold into the local economy and all costs involved in translating these into productive units are paid for by the individual enterpriser in each case. Credit-financing facilities are provided to assist in placing capital-type production units into operation. Both GARIOA dollars and foreign commercial credits are used to support import purchases.

Earliest rehabilitation efforts involved the utilization of such World War II stocks as were surplus to the needs of the Military Occupation. These consisted of salvaged military landing craft (LCMs and LCVPs), life-raft fishing kits, and such other items as local ingenuity could fashion into fishing equipment, regardless of efficiency. Replacement and incorporation of standard-type equipment into the industry is being accomplished as rapidly as supplies become available. Capital-type facilities recently placed into operation consist of 65 fishing vessels totaling 2,400 gross metric tons and 7 ice plants with a daily capacity of 15 tons each.

Shipyard facilities, capable of accommodating fleet requirements, are nearing completion, chiefly, through the use of salvage and surplus materials. A primitive foundry has been fashioned out of salvage materials which gives one yard a capacity for manufacturing most spare parts for hot-bulb marine engines up to 25 horsepower, as well as many vessel fittings.

Fisheries management, on a Central Government level, is in the development stage. The Fisheries Bureau of the Ryukyuan Food and Agriculture Organization, under supervision of Civil Administration, will perform management and development functions. Fisheries regulations will be patterned after prewar Japanese regulations for the Ryukyus area. Shortages of fishing gear in the early years of rehabilitation were such that exploitation offered little threat to abundance levels. A wider dispersal of fishing effort will be required, however, before the ultimate level of production can be realized. This will require the development and adoption of more efficient fishing, processing, and marketing methods.

--By Elmer Quistorff, Chief
Fisheries Division, Food and Agriculture Section,
U. S. Civil Administration of the Ryukyu Islands



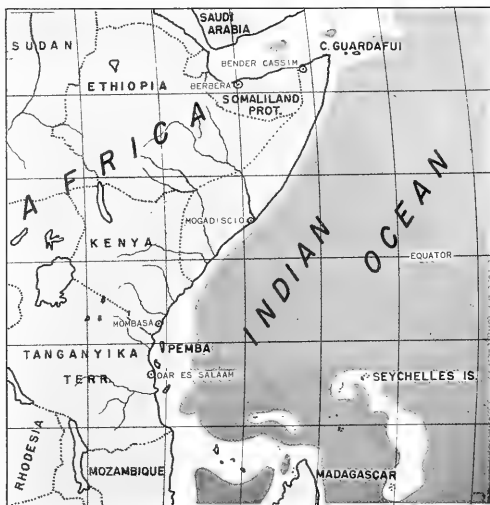
Seychelles Islands

FISHERIES DEVELOPMENT PROGRESS REPORT: The Colonial Development Corporation of Great Britain has announced that its "Seychelles Fisheries" scheme has had a successful beginning.^{1/} This organization is a commercial undertaking financed by an interest-bearing loan from the British Government, an April 11 American consular dispatch from Mombasa, Kenya, states. The loan is administered by the Colonial Development Corporation.

The activities of this concern will offer employment to local residents and supplement the salt-water fresh fish supplies if and when required. This organization hopes to find their main markets on the East African mainland and apparently in the United Kingdom.

More and more ocean-going fishing craft are being attracted to the Mauritius-Seychelles fishing banks. Two additional ships are to be added to the Colonial Development Corporation's Indian Ocean fishing fleet. It was reported that this agency's vessel Silhouette landed 60 metric tons of fish on its first cruise in the Seychellois waters, while two other private trawlers in the same fishing waters were not as successful. The Colonial De-

^{1/}SEE COMMERCIAL FISHERIES REVIEW, FEBRUARY 1949, P. 62.



velopment corporation is constructing a base for its operations on St. Anne Island in the Seychelles group.



Spain

NEW ORGANIZATION PROMOTES CANNED FISH EXPORTS: An organization was recently formed in Spain, with headquarters in Santander, to promote the export of canned fishery products from the four coastal provinces of Oviedo, Santander, Vizcaya, and Guipuzcoa, states an April 18 American consular dispatch from Bilbao. It is believed that the new export drive is to be particularly aimed at promoting exports to the United States and elsewhere in the dollar area. The new group export body, called Export Operation CP3 (Conservas de Pescado 3), is stated to be the third such Spanish organization to have been formed within the past few weeks. Operation CPL is said to cover the Galician area, and CP2 the South Atlantic provinces. All of these groups are apparently patterned after and are rather similar to Operation M1 which was formed in June of 1949 for the promotion of exports from the Province of Guipuzcoa.

Several persons connected with Operation CP3 have indicated that they formed the new organization because they believed that by grouping together in a more or less informal body such as the present one, fish processors and exporters would not only be able to sharply step up their exports, but would also be in a much more favorable position to ask the appropriate governmental authorities for necessary supplies, such as oil, which exporters in the past have frequently complained have hitherto been distributed in wholly inadequate amounts. Furthermore, the participants are reportedly accorded a favorable rate of exchange and to be allowed to retain 20 percent of the foreign exchange proceeds of their sales abroad for the purchase of needed machinery and other items for their own use, and particularly for the purchase of tinplate, which is habitually in short supply.



South-West Africa

PEARL ESSENCE TO BE PRODUCED ON COMMERCIAL SCALE: A Johannesburg firm has installed machinery at one of the factories at Walvis Bay, South-west Africa, for the production of pearl essence on a commercial scale, the March 1951 issue of The South African Shipping News and Fishing Industry Review reports. This factory will now be able to utilize some of the hundreds of tons of fish scales which formerly were wasted by the pilchard canning and reduction factories in the area.

Pilchard scales, because of their unusual lustre, are ideal for the manufacture of pearl essence. After the fine crystals have been extracted, the essence is sent to Johannesburg for use in the manufacture of high-grade artificial pearls.



United Kingdom

IMPORTS OF U. S. CANNED FISH DECLINE: Great Britain no longer regards the United States as a major source for canned fish imports, according to the May 5 issue of The Fishing News, a British fishery periodical. Japan, formerly an important supplier, furnished only 1,000 metric tons during 1950, and there was an appreciable decline in imports of canned fish from the U.S.S.R. Morocco, however, rose from a prewar level of 500 tons to 11,700 tons during 1950.

More than 90 percent of Britain's total prewar supplies of canned fish were imported. Britain used to import some 76,500 metric tons of canned fish of which 18,800 tons came from the U. S., 19,000 tons from Japan, and 17,300 tons from the U.S.S.R. Home production during the prewar period was only 7,000 tons. During 1950, however, home production of canned fish increased to 15,900 tons and the 1950 imports dropped to 65 percent of the total British supplies of canned fish.



U.S.S.R.

PURCHASES DANISH-BUILT TRAWLERS: The Soviet Union has recently signed a contract to purchase eight Danish-built trawlers, states the May 9 issue of Fiskaren, a Norwegian trade periodical. The boats will cost about 1.5 million kroner (about \$210,000) each and will be delivered in the next two years.



Venezuela

FISHING FLEET TO BE INCREASED BY TWENTY-EIGHT VESSELS: The Venezuelan Development Corporation notified the press on May 19 that it has under construction in private shipyards 28 fishing vessels.

These vessels consist of two standard models, a May 21 American consular dispatch from Caracas announces. Eight of the vessels have displacements of 20 metric tons and a speed of 10 knots, with an operation radius of 500 miles and refrigerated storage space. The smaller boats, of which there are 20, have 6 cubic meters of refrigerated storage space.

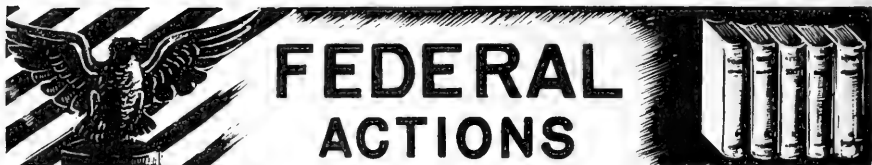
All of these vessels are powered with Diesel engines. They will be sold to fishing companies or to fishermen who meet the requirements, either for cash or on installments. It is stated the first units will be ready very shortly.

* * * * *

SPINY LOBSTER CLOSED SEASON INCREASED TO FIVE MONTHS: The Venezuelan Ministry of Agriculture has announced that the fishing of spiny lobsters (Palinurus argus) is now prohibited from May 1 to September 30, according to an April 27 report from the American Embassy at Caracas. This supersedes previous closed season resolutions.

Since 1947, the closed season has increased from two months to the currently established five months.

NOTE: SEE COMMERCIAL FISHERIES REVIEW, JUNE 1950, P. 66.



Department of Commerce

ESSENTIAL ACTIVITIES LIST REVISED: A revised list of Essential Activities for the guidance of the Defense Department in scheduling calls on reservists to active duty, and for the information of Selective Service in determining draft deferments was issued by the Secretary of Commerce on April 8.

In issuing the revised list, the Secretary said, "The sole purpose of the List of Essential Activities is to serve as a guide in obtaining manpower for the armed services. It is not designed for use in connection with priorities, materials allocations, rationing preference, or other similar purposes."

The revised list, unlike the tentative list issued by the Secretary on August 3, 1950, does not follow the Budget Bureau's Standard Industrial Classification, but has grouped essential activities under 25 broad headings.

Stating that the revision has been drawn in rather strict terms, Secretary Sawyer cited the major considerations involved in determining each activity listed.

Under the foreseeable mobilization program, the products or services of the activity must meet all of the following criteria:

1. BE ESSENTIAL TO THE DEFENSE PROGRAM AND MINIMUM CIVILIAN HEALTH, SAFETY, OR INTEREST.
2. BE INADEQUATE TO MEET DEFENSE AND MINIMUM CIVILIAN REQUIREMENTS, OR FOR WHICH A SERIOUSLY SHORT SUPPLY IS INDICATED.
3. THE CURRENT LEVEL OF EMPLOYMENT IN THE ACTIVITY MUST BE MAINTAINED OR INCREASED.

The revised list was recommended by the Joint Department of Commerce-Department of Labor Committee on Essential Activities and Critical Occupations with the approval of an inter-agency advisory group composed of representatives from Selective Service, and the Departments of Defense, Agriculture, and Interior.

The Joint Commerce-Labor Committee also recommended a revision of the List of Critical Occupations, which was originally issued by the Secretary of Labor on August 3, 1950, and the revised list was issued by the Department of Labor on May 7 (see p.103 of this issue).

Both lists are prepared for use by the Department of Defense for considering requests for delay in call to active duty of Reservists and the National Guard. Also Selective Service has made the lists available to local draft boards as information to assist them in making determinations on requests for deferment of registrants. These agencies have the responsibility for deciding whether a particular individual can serve the Nation better as a civilian or as a member of the armed forces. For this reason, persons in activities or occupations appearing on the lists will not thereby necessarily be granted deferments.

The revised list is subject to further change as conditions warrant. Activities which believe they qualify for listing as essential under the established criteria should communicate with J. Dewey Coates, secretary of the Joint Committee on Essential Activities and Critical Occupations, Room 7326, Labor Department Building.

The revised List of Essential Activities as issued includes the following activities of probable interest to the fishing and allied industries:

PRODUCTION OF SHIPS AND BOATS

PRODUCTION, MAINTENANCE, AND REPAIR OF MILITARY AND COMMERCIAL SHIPS AND BOATS AND COMPONENT PARTS.

AGRICULTURE AND COMMERCIAL FISHING

(A) AGRICULTURE - PRODUCTION OF AGRICULTURAL COMMODITIES FOR COMMERCIAL SALE, EXCEPT UNUSUAL OR LUXURY ITEMS; COMMERCIAL FISHING.

FOOD PROCESSING

ASSEMBLING, PROCESSING, AND QUALITY CONTROL OF FOOD AND FEED PRODUCTS EXCEPT UNUSUAL OR LUXURY ITEMS.

PRODUCTION OF WOOD PRODUCTS

WOODEN PARTS OF AIRCRAFT, SHIPS, AND OTHER MILITARY EQUIPMENT; SHOE LAST BLOCKS; SHOE LASTS.

PRODUCTION OF MACHINERY AND EQUIPMENT

PRODUCTION MACHINERY, EQUIPMENT, AND ACCESSORIES; MACHINISTS PRECISION TOOLS; ABRASIVES AND CUTTING TOOLS; ANTI-FRICTION BEARINGS; CONSTRUCTION MACHINERY AND EQUIPMENT; MINING AND OIL FIELD MACHINERY AND EQUIPMENT; MACHINERY AND EQUIPMENT FOR AGRICULTURAL PRODUCTION AND PROCESSING; POWER GENERATING, TRANSMISSION, DISTRIBUTION, AND CONTROL EQUIPMENT; CRANES, INDUSTRIAL TRUCKS AND CONVEYORS; PROFESSIONAL AND SCIENTIFIC INSTRUMENTS AND EQUIPMENT; PRECISION TESTING, RECORDING, CONTROLLING, TIMING AND MEASURING INSTRUMENTS, VALVES, AND METERS; SAFETY EQUIPMENT; PROTECTIVE SIGNALING EQUIPMENT; OFFICE MACHINES.

PRODUCTION OF SHIPPING CONTAINERS

CONTAINERS FOR PRODUCTS IDENTIFIED ON THIS LIST (GLASS, METAL, PLASTIC WOOD, PAPER, AND TEXTILE), INCLUDING RECONDITIONING OF AND CAPS AND CLOSURES FOR SUCH CONTAINERS; METAL STRAPPING.

INDUSTRIAL SERVICES

MAINTENANCE AND REPAIR SERVICES FOR ACTIVITIES IDENTIFIED ON THIS LIST; COMMERCIAL SALVAGE SERVICES.

TRANSPORTATION SERVICES

OPERATION OF PASSENGER AND CARGO TRANSPORT AIRCRAFT; AIRWAYS OPERATION (CONTROL AND COMMUNICATION); OCEAN TRANSPORTATION; INLAND WATERWAY FREIGHT TRANSPORTATION; PORT FACILITIES; PUBLIC WAREHOUSING; RAILROAD TRANSPORTATION; COMMON AND CONTRACT CARRIER TRUCKING; PIPELINE TRANSPORTATION; FREIGHT FORWARDING.

NOTE: SEE COMMERCIAL FISHERIES REVIEW, SEPTEMBER 1950, PP. 59-62.

NATIONAL PRODUCTION AUTHORITY

ADJUSTED LIMITATIONS ON USE OF DEFENSE ORDER RATING DO-97: To compensate for increased prices and accelerated programs, adjusted limitations on the use of the defense order rating (DO-97) for maintenance, repair, and operating (MRO) supply items were announced on May 22 by the National Production Authority.

This action, an amendment to NPA Regulation 4, permits use of the DO-97 rating for up to 120 percent of the amount spent on such MRO items during the base period. The limit had been 100 percent.

NPA explained that this situation developed because:

1. PRICES ON MRO ITEMS HAVE INCREASED ABOUT 10 PERCENT OVER THE BASE PERIOD AVERAGE. THUS ORGANIZATIONS WEREN'T GETTING AS MUCH MATERIAL AS THEY WERE DURING THE BASE PERIOD, SINCE LIMITATION IS ON A DOLLAR-EXPENDITURE BASIS.

2. EXPANSIONS AND INCREASED USE OF AVAILABLE FACILITIES CREATED A DEMAND FOR MORE MRO ITEMS AT THE VERY TIME ORGANIZATIONS WERE GETTING LESS BECAUSE OF THE PRICE FACTOR. THIS INCREASED DEMAND WAS ESTIMATED AT 10 PERCENT.

Therefore the limitation on DO-97 use was increased from 100 percent to 120 percent to absorb the increased price and use factors.

The objective of the MRO program, NPA said, is to assure operation of civilian and military economy at the highest possible rate with the least possible drain on scarce materials.

In addition to the use increase, this amendment also made these changes in Regulation 4 to provide flexibility and to reduce the flow of applications for quota adjustments:

1. ANY ORGANIZATION THAT USES THE DO-97 RATING TO GET 20 PERCENT OR LESS LESS OF ITS QUARTERLY QUOTA WILL ALSO BE PERMITTED TO PURCHASE AN UNLIMITED MRO TOTAL WITHOUT USE OF THE RATING, SUBJECT TO INVENTORY AND USE LIMITATIONS AND ANY RESTRICTIONS CONTAINED IN OTHER NPA ORDERS. HERETOFORE, IF A FIRM USED THE DO-97 RATING AT ALL, IT WAS LIMITED TO AN OVER-ALL TOTAL OF 100 PERCENT, RATED OR UNRATED, OF ITS BASE PERIOD USE.
AN ORGANIZATION NOW WILL BE ABLE TO USE DO-97 FOR SOME SCARCE ITEMS AND STILL BE FREE TO MAKE INCREASED PURCHASES OF OTHER NEEDS ON THE OPEN MARKET. THIS SHOULD TEND TO PREVENT UNNECESSARY DO-97 USE, NPA SAID, AS WELL AS CONSERVING ITS USE FOR THE MORE SCARCE MATERIALS.
2. THE AMENDED ORDER PERMITS A CHOICE OF BASE PERIOD: EITHER THE CALENDAR YEAR OR THE NEAREST FISCAL YEAR ENDING BEFORE MARCH 1, 1951.
3. DO-97 USE FOR CAPITAL ADDITIONS IS LIMITED TO 10 PERCENT OF THE QUARTERLY QUOTA OR TO \$750, WHICHEVER IS HIGHER. THIS IS TO PREVENT OVER-USE FOR CAPITAL ADDITIONS AT THE EXPENSE OF MRO USE, NPA SAID.
4. COMPANIES WHICH HAVE MORE THAN ONE PLANT WITHIN THE UNITED STATES AND ITS TERRITORIES AND POSSESSIONS NOW HAVE THE OPTION OF DECIDING WHETHER MRO QUOTAS SHALL BE ESTABLISHED FOR EACH PLANT INDIVIDUALLY OR FOR THE ORGANIZATION AS A WHOLE. PREVIOUSLY, QUOTAS WERE ON A SINGLE-PLANT BASIS.
5. DO-97 CANNOT BE USED TO OBTAIN MATERIAL ON LEASE.

The defense rated order for maintenance, repair, and operating supplies may be used by all business firms, government agencies, and public and private institutions, such as schools, libraries, hospitals, churches, clubs and welfare establishments. It may not be used for procurement of personal or household supplies.

The DO-97 rating may not be applied or extended under NPA Regulation 4 to a number of materials, including nylon fibers and yarns; packaging materials and containers; paper and paper products; paperboard and paperboard products; food; solid fuels; gas; petroleum.

Text of the Regulation 4 as amended May 22, 1951, follows:

REG. 4—MAINTENANCE, REPAIR, AND OPERATING SUPPLIES AND MINOR CAPITAL ADDITIONS

This regulation as amended is found necessary and appropriate to promote the national defense and is issued pursuant to the Defense Production Act of 1950. In the formulation of the regulation, before amendment, there was consultation with a number of industry representatives, including trade associa-

tion representatives, but it was found impracticable to consult with all affected industries because the regulation applies to all trades and industries. In the formulation of this regulation, as amended, however, such consultation has been rendered impracticable because of the need for immediate action.

This regulation amends NPA Reg. 4, as last amended April 16, 1951, in its entirety to read as follows:

Sec.

1. What this regulation does.
2. Definitions.
3. DO rating assigned.
4. Quarterly MRO quotas.
5. Charges against quota.
6. Materials obtained for another's benefit.
7. Use of materials.
8. Inventory limitations.
9. Relation to other regulations.
10. Supplier receiving improperly rated orders.
11. Records and reports.

12. Applications for adjustment or exception.
13. Communications.
14. Violations.

AUTHORITY: Sections 1 to 14 issued under sec. 704, Pub. Law 774, 81st Cong. Interpret or apply sec. 101, Pub. Law 774, 81st Cong.; sec. 101, E. O. 10161, Sept. 9, 1950, 15 F. R. 6105, 3 CFR, 1950 Supp.; sec. 2, E. O. 10200, Jan. 3, 1951, 16 F. R. 61.

SECTION 1. What this regulation does. This regulation provides a uniform procedure by which any business enterprise, Government agency, or public or private institution may use a DO-rating (identified by the symbol "DO-97") to obtain limited quantities of materials for maintenance, repair, and operating supplies (hereinafter collectively referred to as "MRO") as well as minor capital additions. It provides for the establishment of quarterly quotas for MRO. The regulation does not limit the quantity of materials which may be obtained in any quarter by a person who makes no use of the DO-97 rating to obtain materials in such quarter. A person may not exceed his quarterly quota except in a quarter in which (1) the total charges against his quota on account of rated-orders do not exceed 20 percent of such quota, or (2) his total charges against his quota do not exceed \$1,000. The rating may not be used to obtain materials for personal or household use.

SEC. 2. Definitions. For purposes of this regulation:

(a) "Person" means any individual, partnership, corporation, association, or other organized group, and includes any business enterprise, Government agency or institution. If in 1950, or in his last fiscal year ending prior to March 1, 1951, a person operated more than one plant, division, department, branch, or other unit, and maintained for any such unit separate records showing expenditures therefor for MRO, he may elect to treat any one or more of such units as a separate person for the purposes of determining the MRO quota and charges against such quota, or to treat his entire operation within the United States, its territories, and possessions as a person. In the absence of a contrary election, each such unit shall be treated for such purposes as if it were a separate person. An election so made may not be changed without prior written approval of the NPA.

(b) "Business enterprise" means a lawful activity conducted for profit in the United States, its territories or possessions.

(c) "Government agency" means the United States, its territories and possessions, any of the 48 States or the District of Columbia, any political subdivision of any of the foregoing, and any agency of any of the foregoing which is not a business enterprise.

(d) "Institution" means any lawful organization, public or private, within the United States, its territories and possessions, which is neither a business enterprise nor a Government agency.

It includes, but is not limited to schools, libraries, hospitals, churches, clubs, and welfare establishments.

(e) "Maintenance" means the continuation of any plant, facility, or equipment in sound working condition, and "repair" means the restoration of any plant, facility, or equipment to sound working condition when it has been rendered unsafe or unfit for service by wear and tear, damage, failure of parts, or the like. Neither "maintenance" nor "repair" includes replacement of any plant, facility, or equipment.

(f) "Operating supplies" means, in the case of a business enterprise, any kind of material carried by such business enterprise as operating supplies according to its established accounting practice. Materials incorporated in a product are operating supplies of a business enterprise, if, but only if, they were carried as operating supplies according to the established accounting practice of the business enterprise. "Operating supplies" means, in the case of a Government agency or an institution, any kind of material used by the agency or institution in conducting any activity or rendering any service, provided such material is consumed in the course of operation and was not carried as capital equipment by the agency or institution according to its established accounting practice.

(g) "Minor capital addition" means any improvement or addition of a kind carried by the person as capital according to his established accounting practice, the total cost of the materials for which, acquired by such person, does not exceed \$750 for any one complete capital addition. No capital addition may be subdivided for the purpose of bringing it or any part of it within the foregoing definition. In computing the cost of such improvement or addition, for the purposes of this regulation, the cost of all materials obtained by the person pursuant to the same project or plan (regardless of whether they are acquired with the use of the rating) shall be included even though the respective materials are ordered or delivered at different times and are obtained from different suppliers.

(h) "MRO" means materials for maintenance, repair, and operating supplies. It does not include capital additions. The term "minor capital addition" is specifically used whenever it is intended to be included within the provisions of this regulation. Materials produced or obtained for sale to other persons or for installation upon or attachment to the property of other persons are not "MRO" of the producer or supplier.

(i) "Material" means any raw, in-process, or manufactured commodity, equipment, component, accessory, part, or product of any kind.

(j) "Established accounting practice" means, in the case of a person in operation on or before December 31, 1950, the accounting practice in use by such per-

son on that date or on the last day of his operation prior thereto. In the case of a person whose operation begins after December 31, 1950, the term means the accounting practice established by him in such operation.

SEC. 3. DO rating assigned. (a) The NPA hereby assigns to every business enterprise, Government agency, and institution, the right to apply a DO-97 rating to obtain MRO and minor capital additions subject to the restrictions specified in paragraph (e) of this section and in section 5 (c). The DO-97 rating may not be applied or extended to obtain any materials listed in either table I or in table II appearing at the end of this regulation, and may not be applied to obtain any equipment pursuant to any lease.

(b) The DO-97 rating shall be applied by placing on the purchase order, or on a separate piece of paper attached to the order or clearly identifying it, the symbol "DO-97" together with the words "Certified under NPA Reg. 4." When such rating is extended it shall be likewise certified. Such certification shall be signed as prescribed in section 8 of NPA Reg. 2. The certification shall constitute a representation to the supplier and to NPA that the person making it is authorized under the provisions of this regulation to use the rating to obtain the materials covered by the order.

(c) The DO-97 rating shall not be applied or extended by any person pursuant to this regulation, in order to obtain any item of MRO or any minor capital addition, or material therefor, at a time when such person is entitled, pursuant to any other regulation, order, directive, or other action of NPA, to obtain such item, minor capital addition, or material by the use of the DO-97 rating or any other DO rating symbol or any other form of priorities assistance.

(d) The DO-97 rating which, prior to April 16, 1951, was applied or extended to any contract or purchase order for any material listed in table I is cancelled, and such rating shall no longer have any effect whatever. This paragraph shall not be construed to mean that any such contract or purchase order itself is cancelled or otherwise affected by this regulation.

(e) The DO-97 rating may not be applied to obtain in any quarter (calendar or fiscal) materials for minor capital additions exceeding in the aggregate 10 percent of the person's MRO quota for such quarter, or \$750, whichever is greater.

Sec. 4. Quarterly MRO quotas—(a) Computing the quota base. A person who applies the DO-97 rating must establish his quarterly MRO quota. In calculating the MRO quota base a person may include all expenditures by him in the base period for MRO (except materials listed in table II) even though such MRO consists of materials listed in table I. Expenditures for capital additions may not be included in the com-

putation of the quota base.

(b) *Standard base period.* The standard base period is the calendar year 1950.

(c) *Fiscal year base period.* If a person operated on a fiscal year basis prior to March 1, 1951, he may elect to take as his base period his last fiscal year ending prior to that date. In such event he shall establish his MRO quotas for his fiscal quarters. After such election has been made, it may not thereafter be changed without the prior written approval of NPA.

(d) *Standard quota.* The standard quarterly quota is one-fourth of 120 percent of the quota base.

(e) *Seasonal quotas.* A person may elect to establish seasonal quarterly quotas. An election so made may not be changed thereafter without the prior written approval of NPA. Such seasonal quota for any quarter shall be 120 percent of the expenditures by the person for MRO (except materials listed in table II) in the corresponding quarter of his base period.

(f) *Persons not in operation throughout the base period.* A person not in operation throughout his entire base period shall establish and report his quarterly MRO quotas as follows:

(1) *Persons operating during part of the base period.* A person who was in operation during a part but not all of the year 1950 (or a part but not all of his last fiscal year ending prior to March 1, 1951) shall determine his quota base by computing the amount he would have spent for MRO (except materials listed in table II) in his base period had he continued to spend therefor throughout the year at the same rate as during the part of the year in which he was in operation, making necessary corrections to compensate for seasonal or other exceptional characteristics of the period in which he was in operation. Such person's standard quarterly MRO quota is one-fourth of 120 percent of his quota base. If such person elects to establish seasonal quarterly quotas, as above provided, he may divide 120 percent of his quota base into four quarterly MRO quotas in accordance with the seasonal demands of the activity in which he is engaged.

(2) *Persons not in operation during any part of the base period.* If a person was not in operation in any part of 1950 (or of his last fiscal year ending prior to March 1, 1951), his quarterly MRO quota (standard or seasonal) shall be the amount he determines to be necessary for his operation. However, the quota of such person may not exceed \$5,000 for any quarter without prior written approval of NPA.

(3) *Quarterly quotas in excess of \$1,000.* A person who establishes a quarterly MRO quota in excess of \$1,000 pursuant to subparagraphs (1) and (2) of this paragraph (f) must, within 30 days after he first applies a DO-97 rating, notify NPA in writing of the quota he has established, the base period he used, the method he used in computing his quota, and the corrections he made for seasonal or other factors.

(g) *Future use of increase quotas.* If a person's quarterly MRO quota is increased by specific authorization of NPA pursuant to section 12 of this regulation, the increased quota becomes his standard quota unless the increase is granted on a temporary or seasonal basis or is otherwise restricted by the terms of the authorization. An increased quarterly MRO quota granted as a seasonal quota may be used only in the corresponding quarter of subsequent years.

(h) *Increase not retroactive.* An increase in quota granted pursuant to section 12 of this regulation is not retroactive.

Sec. 5. *Charges against quota*—(a) *Operation on delivery basis.* A person operating on the delivery basis shall charge expenditures against his MRO quota for the quarter (calendar or fiscal) in which his purchase order specifies that delivery is to be made. When such person applies the DO-97 rating in any quarter (calendar or fiscal) he shall charge against his MRO quota for such quarter:

(1) All expenditures for MRO (except materials listed in table II) ordered for delivery during the quarter whether or not obtained by the use of the DO-97 rating, and

(2) All expenditures for minor capital additions ordered for delivery during the quarter if (but only if) obtained by applying the DO-97 rating.

(b) *Operation on receipts basis.* A person who prefers to do so may charge expenditures against his MRO quota for the quarter (calendar or fiscal) in which the materials were actually received. He may not use one method for part of his MRO and the other method for the remainder in any quarter. Having elected to use one method he may not thereafter change to the other without the prior written approval of NPA. A person so electing to charge the quota for the quarter of actual receipt shall charge against such quota:

(1) All expenditures for MRO (except materials listed in table II) received during the quarter whether or not obtained by the use of the DO-97 rating, and

(2) All expenditures for minor capital additions received during the quarter if (but only if) obtained by applying the DO-97 rating.

(c) *Exceeding the quota.* (1) A person, whose MRO quota, computed in accordance with section 4, is less than \$1,000 in any quarter, may order or receive MRO and minor capital additions to the same extent as if his quota for such quarter were \$1,000.

(2) If a person operating on the delivery basis applies the DO-97 rating to purchase orders for delivery in any quarter, which orders aggregate not more than 20 percent of his MRO quota for such quarter, he may, in addition, place unrated orders for delivery of MRO and minor capital additions in such quarter without regard to his quota.

(3) If a person operating on the receipts basis receives in any quarter, pur-

suant to purchase orders to which he applied the DO-97 rating, materials aggregating not more than 20 percent of his MRO quota for such quarter, he may, in addition, receive in such quarter, pursuant to unrated orders, MRO and minor capital additions without regard to his quota.

(4) If a person operating on the delivery basis applies the DO-97 rating to purchase orders for delivery in any quarter, which orders aggregate more than 20 percent of his MRO quota for such quarter, his total orders chargeable against his MRO quota for such quarter may not exceed such quota, and his orders for delivery during the first month of such quarter shall not exceed 40 percent of such quarterly quota.

(5) If a person operating on the receipts basis receives in any quarter, pursuant to purchase orders to which he applied the DO-97 rating, materials aggregating more than 20 percent of his MRO quota for such quarter, his total receipts chargeable against his MRO quota for such quarter may not exceed such quota, and his receipts during the first month of such quarter may not exceed 40 percent of such quarterly quota.

Sec. 6. *Materials obtained for another's benefit*—(a) *Materials supplied by service trades.* Any business enterprise (such as a service repair shop) engaged in doing maintenance or repair work or installing minor capital additions for any other person may apply the DO-97 rating to obtain materials therefor, but only to the extent that such other person would be entitled to do so if he were doing the work himself. The cost of materials so obtained (but not the cost of the labor or services of the person doing such work or making such installation) shall be charged to the MRO quota of the person for whom the work is done.

(b) *Obligation to supply MRO under lease or other agreement.* A person who is obligated to maintain, repair, or operate any plant, facilities, or equipment, under the terms of any lease or other agreement for the use of such property by another person, may apply the DO-97 rating to obtain materials needed for such purposes. Expenditures for such materials shall be charged to the MRO quota of the person thus applying the DO rating except that if his purchase is made on a reimbursable basis for the account of the person using the property, the latter's MRO quota shall be charged.

Sec. 7. *Use of materials.* If a person has obtained materials for MRO or minor capital additions by applying the DO-97 rating, he may use them for a different purpose if he could have applied any other DO rating to acquire them for such purpose. However, if he does use them for such different purpose, he may not use the DO-97 rating to replace them in inventory. To replace such materials in inventory he may use only the DO rating which he might have applied to obtain them for the purpose for which he used them. If he uses such

materials obtained by applying the DO-97 rating for such different purpose, his records must be adequate to show that his purchases of material are substantially proportionate to his authorized rated uses.

Sec. 8. Inventory limitations. (a) Nothing in this regulation shall be deemed to authorize any person to order or receive any material if acceptance thereof would increase his inventory above a "practicable minimum working inventory" as defined in NPA Reg. 1, or the limit fixed in any other applicable regulation or order of NPA.

(b) No person shall apply the DO-97 rating to a purchase order for operating supplies if delivery of such material will increase his inventory thereof above the amount which he normally uses for operating supplies in a period of 60 days, or such other period which may be specified in the applicable orders or regulations of NPA, whichever is less.

(c) No person shall accept delivery of any operating supplies pursuant to a purchase order to which he has applied a DO-97 rating if his inventory of such material will thereby become greater than his normal use thereof for operating supplies in a period of 60 days, or such other period which may be specified in the applicable orders or regulations of NPA, whichever is less.

(d) A person who has placed an order for operating supplies before the effective date of this regulation, as amended, which order is outstanding and for delivery of a greater quantity of material than he is permitted by this section to rate or receive, must promptly cancel, reduce, or defer the delivery of such operating supplies to the extent necessary to comply with the limitations of this section.

(e) Nothing in this section shall prohibit the acceptance of delivery of operating supplies pursuant to a purchase order to which the DO-97 rating has been or shall be applied if the person is entitled to accept delivery of any part of such operating supplies, and the total quantity thereof ordered does not exceed the minimum quantity which is commercially procurable.

Sec. 9. Relation to other regulations—

(a) *Rules governing use of rating.* This regulation supplements NPA Reg. 2, which sets forth the basic rules of the priorities system, and the provisions of that regulation govern the use of the DO-97 rating herein assigned.

(b) *Delegations to Government agencies.* This regulation does not revoke or prevent the use of any authority delegated by NPA to any other Government agency whereby such agency may use ratings other than DO-97 for direct procurement of its own requirements of MRO or minor capital additions.

(c) *Other regulations and orders.* Nothing in the regulation shall be construed to relieve any person from the obligation of complying with such limitations on acquisition or use of materials

or such other provisions as may be contained in any applicable regulation or order of NPA or with any order of any other competent authority.

Sec. 10. Supplier receiving improperly rated orders. When a supplier has received a purchase order bearing the rating DO-97, which rating he knows, or has reason to believe, has been applied or extended in violation of any regulation or order of NPA, the supplier shall refuse to accept it as a rated order. In such event, the supplier shall promptly advise the buyer of his reason for such refusal.

Sec. 11. Records and reports—(a) *Records to be kept.* Each person who makes any use of the rating assigned by this regulation shall make and preserve, for so long as this or any successor regulation remains in effect and for 2 years thereafter, accurate and complete records showing what his quarterly MRO quotas are, how he computed them, the factual justification for them and for corrections or revisions thereof, any elections made as to the use of seasonal quotas, methods of figuring quotas and charges against them, or other options exercised, all materials ordered or received for use as MRO or minor capital additions whether rated or not, and all other relevant data, in sufficient detail to permit an audit that determines for each transaction that the provisions of this regulation have been met. This does not specify any particular accounting method and does not require alteration of the system of records customarily maintained, provided such records disclose the above data and supply an adequate basis for audit. Records may be retained in the form of microfilm or other photographic copies instead of the originals.

(b) *Inspection and audit.* All records required by this regulation shall be made available at the usual place of business where maintained for inspection and audit by duly authorized representatives of NPA.

(c) *Other records and reports.* Persons subject to this regulation shall make such further records and submit such further reports to NPA as it shall require, subject to the terms of the Federal Reports Act of 1942 (5 U. S. C. 139-139F).

Sec. 12. Applications for adjustment or exception. Any person affected by any provision of this regulation may file a request for adjustment or exception upon the ground that such provision works an undue or exceptional hardship upon him not suffered generally by others in the same trade or industry, or that its enforcement against him would not be in the interest of the national defense or in the public interest. In examining requests for adjustment claiming that the public interest is prejudiced by the application of any provision of this regulation, consideration will be given to the requirements of the public health and safety, civilian defense, and dislocation of labor and resulting unemployment that would im-

pair the defense program. Each request shall be submitted in writing, in triplicate, on Form NPAF-78. The request shall state the nature of the relief sought and the justification therefor, together with all pertinent facts.

Sec. 13. Communications. All communications concerning this regulation, including applications for exceptions or quota adjustments, shall be addressed to National Production Authority, Washington 25, D. C. Ref: NPA Reg. 4.

Sec. 14. Violations. Any person who wilfully violates any provision of this regulation or who wilfully conceals a material fact or furnishes false information in the course of operation under this regulation is guilty of a crime and, upon conviction, may be punished by fine or imprisonment or both. In addition, administrative action may be taken against any such person to suspend his privilege of making or receiving further deliveries of materials or using facilities under priority or allocation control and to deprive him of further priorities assistance.

NOTE: All reporting and record-keeping requirements of this regulation have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

This regulation as amended shall take effect on May 22, 1951.

NATIONAL PRODUCTION AUTHORITY,

MANLY FLEISCHMANN,
Administrator.

TABLE I

Materials to obtain which a DO-97 rating may not be applied or extended under NPA Reg. 4:

1. All basic, organic or inorganic chemicals, their intermediates and derivatives other than compounded end-products not customarily sold as chemicals.
2. Items appearing in list A of NPA Order M-47, as the same may be amended from time to time.
3. Nylon fibers and yarns.
4. Packaging materials and containers.
5. Paint, lacquer, and varnish.
6. Paper and paper products.
7. Paperboard and paperboard products.
8. Photographic film.
9. Rails, tie plates, track spikes, splice bars, rail joints, frogs, and switches.
10. Rubber tires and tubes.

TABLE II

Materials, the allocation and distribution of which are subject to regulation by other Government agencies and therefore are not subject to any DO rating issued by or under the authority of NPA:

- Farm equipment as defined in NPA Order M-55A, as the same may be amended or supplemented from time to time.¹
Fertilizer, commercial.¹
Food.¹
Fuels, solid.²
Gas.²
Ores, concentrates, residues, certain metals and other products listed in NPA Del. 5 (Dec. 18, 1950), 15 F. R. 9195.²
Petroleum.²

The following products which are used in the petroleum industry:²

Tetraethyl lead fluid.
 Petroleum cracking catalysts.
 Special inhibitors used in gasoline.
 Lubricating oil additives.

Fluids and additives made especially for oil
 and gas drilling demulsifiers.
 Radiolotopes, stable isotopes, and source and
 fissionable materials.⁴

¹ Under jurisdiction of the Department of
 Agriculture.
² Under jurisdiction of the Department of
 the Interior.
³ Under jurisdiction of the Atomic Energy
 Commission.

* * * * *

MARINE MAINTENANCE, REPAIR, AND OPERATING SUPPLIES ORDER ISSUED: NPA Order M-70 (Marine Maintenance, Repair, and Operation Supplies and Minor Capital Additions), issued June 19, 1951, and effective on that date, authorizes a new priority rating for marine suppliers, ship-repair yards, and operators of vessels, except pleasure craft. It supersedes Regulation 4 with respect to marine MRO and minor capital additions, and prescribes the procedure for the application of DO ratings during the third quarter of 1951.

The changes are more far-reaching with respect to ship-repair yards and ship chandlers than vessel operators. Among the differences vessel operators should note are:

1. THE DEFINITIONS, PARTICULARLY THAT FOR "MAINTENANCE," INCLUDE THE REACTION OF VESSELS IN STORAGE OR NOT IN USABLE CONDITION.
2. THE ASSIGNMENT OF THE RATING "DO-91P" IN LIEU OF DO-97.
3. OPTIONAL USE OF THE FOURTH CALENDAR QUARTER OF 1950 OR THE FIRST CALENDAR QUARTER OF 1951 AS THE BASE PERIOD FROM WHICH TO COMPUTE HIS QUOTA; RATHER THAN CALENDAR OR FISCAL 1950.
4. THE CERTIFICATION NOW MUST READ "CERTIFIED UNDER NPA ORDER M-70 AND REG.22."

Ship-repair yards and ship chandlers will find that in addition to the above changes in their customers' orders, they are no longer required to accumulate their customers' ratings and extend these to replenish their inventories--indeed a supplier or shipyard is specifically prohibited from extending ratings received from his customers for items he normally carries in inventory. Instead, he is allowed to apply, i.e., initiate a rating on his own orders to his suppliers "to obtain stocks of inventory for delivery during the third calendar quarter of 1950 to the extent necessary to bring his inventory to 120 percent of the dollar amount of his average end-of-the-month inventory during the fourth calendar quarter of 1950 or to a practicable working inventory...."

He is restricted in disposing of such stocks to people under the scope of the Order, who must give him a DO-91P rating.

The regulation also spells out the procedure which should be used by ship-repair yards to get controlled materials, and contains provisions for foreign flag and Canadian vessels.

The new rating is similar to the DO-97¹/₂ rating used by other industries, business firms, and private and public institutions. The chief difference is that a supplier may initiate the DO-91P rating to build up a specific inventory in advance of the receipt of orders.

M-70—MARINE MAINTENANCE, REPAIR, AND
 OPERATING SUPPLIES AND MINOR CAPITAL
 ADDITIONS

This order is found necessary and appropriate to promote the national defense and is issued pursuant to the authority

granted by section 101 of the Defense Production Act of 1950. In the formulation of this order, consultation with industry representatives has been rendered impracticable due to the necessity for immediate action.

Sec.

1. What this order does.
2. Definitions.
3. DO rating assigned.
4. Water transportation system consumer's use of rating and quota limitations.

¹/SEE PP. 79-84 OF THIS ISSUE.

5. Supplier's use of rating, increase of inventory, and inventory limitation.
6. Ship repair yard's use of rating, increase of inventory, and inventory limitation.
7. Foreign flag vessel's use of rating.
8. Canadian flag vessel's use of rating.
9. Application and certification of rating.
10. Limitation on application of rating.
11. Limitation on extension of rating.
12. Prohibited deliveries.
13. Application to other orders and regulations.
14. Records, reports, audit, and inspection.
15. Applications for adjustment or exception.
16. Communications.
17. Violations.

AUTHORITY: Sections 1 to 17 issued under sec. 704, Pub. Law 774, 81st Cong. Interpret or apply sec. 101, Pub. Law 774, 81st Cong.; sec. 101, E. O. 10161, Sept. 9, 1950, 15 F. R. 6105; 3 CFR, 1950 Supp.; sec. 2, E. O. 10200, Jan. 3, 1951, 16 F. R. 61.

SECTION 1. What this order does. The purpose of this order is to provide a procedure whereby maintenance, repair, and operating supplies, as well as minor capital additions, for water transportation systems may be obtained during the third calendar quarter of 1951 or until the NPA Controlled Materials Plan shall be effective as to such items. It provides a procedure to be used for the application of DO ratings during the said third quarter.

Sec. 2. Definitions. For the purposes of this order:

(a) "Person" means any individual, corporation, partnership, association, or any other organized group of persons, and includes any agency of the United States or any other government.

(b) "Water transportation system" means any domestically owned American flag vessel of any type on the inland waterways, or Great Lakes, or in coastwise, intercoastal, or seagoing service, except a vessel subject to the jurisdiction of the Coast Guard or to the jurisdiction of the Department of Defense as a claimant agency under DPA Order 1, except floating equipment owned by a railroad when MRO is furnished or performed by such railroad, and except vessels operated exclusively for pleasure.

(c) "Water transportation system consumer" means the owner, lessee, or charterer of a water transportation system.

(d) "Foreign flag vessels" means those vessels registered in countries other than the United States or Canada.

(e) "Canadian flag vessels" means those vessels registered in the Dominion of Canada.

(f) "Supplier" means a distributor of marine MRO or minor capital additions for the use of water transportation systems.

(g) "Ship repair yard" means any person, located in the United States, its territories or possessions, who regularly provides MRO or minor capital additions for boats and vessels.

(h) "Maintenance" means the minimum upkeep necessary to continue any unit of water transportation or a part or a component thereof in sound working condition. "Maintenance" also

means the reactivation of vessels in storage or not in usable condition.

(i) "Repair" means the restoration to sound working condition of any vessel or a part or a component thereof when it has been rendered unsafe or unfit for service by wear and tear, damage, failure of parts, or the like.

(j) "Maintenance" and "repair" include the replacement of any marine equipment regardless of its accounting classification, but neither "maintenance" nor "repair" includes addition to a unit of water transportation or a part or a component thereof which is in sound working condition with material of a new or different kind, quality, or design. Where a replacement is more economical than a repair, such replacement shall not be undertaken under any provision of this order in the absence of the specific approval of the National Production Authority.

(k) "Operating supplies" means material, other than fuel, which is used or consumed in the course of operations of a water transportation system.

(l) "Minor capital additions" means any improvement, addition, betterment, or conversion of a kind carried as capital by a water transportation system, but no such improvement, addition, betterment, or conversion shall exceed \$750 in cost. In computing the cost of such improvement, addition, betterment, or conversion for purposes of this order, the cost of all materials obtained by the person pursuant to the same project or plan shall be included even though the respective materials are ordered or delivered at different times and are obtained from different sources of supply. No capital addition shall be subdivided for the purpose of bringing it or any part of it within the foregoing limitations. "Minor capital addition" does not include conversions covered by present or future orders or directives issued by the National Production Authority.

(m) "MRO" means maintenance, repair, and operating supplies as defined in this section but exclusive of fuel, and does not include minor capital additions. The latter term is specifically used in this order wherever the meaning so requires. Materials or products sold by a supplier thereof or a ship repair yard for "MRO" shall not be deemed "MRO" as to such supplier. While the order applies to water transportation system consumers, suppliers, and ship repair yards and supersedes NPA Reg. 4, as amended, with respect to their marine MRO, it does not provide for their other "MRO" and minor capital additions, the procurement of which remains subject to all of the provision of NPA Reg. 4, as amended.

(n) "Controlled materials" means steel, copper, and aluminum in the forms and shapes specified in Schedule 1 of CMP Reg. No. 1.

(o) "NPA" means the National Production Authority.

Sec. 3. DO rating assigned. Subject to the limitations of section 4 of this order with respect to water transportation system consumers, section 5 of this

order with respect to suppliers, section 6 with respect to ship repair yards, section 7 with respect to foreign flag vessels, and section 8 with respect to Canadian flag vessels, the NPA hereby assigns to such persons the right to apply a DO-91P rating to obtain MRO and minor capital additions for delivery during the third calendar quarter of 1951. The DO-91P rating shall be applied as provided in section 9 of this order.

Sec. 4. Water transportation system consumer's use of rating and quota limitations. A water transportation system consumer who desires to apply the DO rating herein assigned shall apply the rating only to the extent and in the manner prescribed by this section as follows:

(a) **Quarterly MRO and minor capital additions quota.** Every water transportation system consumer applying the DO-91P rating to obtain the MRO and minor capital additions of a water transportation system or systems must establish a quarterly quota for this purpose, which quota shall be 120 percent of the amount he expended to obtain MRO for his water transportation system or systems during the fourth calendar quarter of 1950, unless he elects to use the first calendar quarter of 1951. An election to use the first calendar quarter of 1951 may not subsequently be changed without the prior written authorization of NPA. In computing his quota, the water transportation system consumer shall include total expenditures for such MRO during the quarter selected, excluding expenditures for minor capital additions.

(b) **Charges against quota.** Any water transportation system consumer who applies the DO-91P rating for the purposes of this section shall charge against his quarterly MRO quota:

(1) The cost of all MRO ordered for delivery during the quarter, whether or not obtained by use of the DO-91P rating, and

(2) The cost of all minor capital additions ordered for delivery during the quarter only if obtained by use of the DO-91P rating.

(c) **Prohibition against exceeding quota.** No person shall order for delivery during the third calendar quarter of 1951 a quantity of material chargeable against his MRO quota which exceeds the amount of such quota.

Sec. 5. Supplier's use of rating, increase of inventory, and inventory limitation. A supplier may apply the DO-91P rating to obtain stocks of inventory for delivery during the third calendar quarter of 1951 to the extent necessary to bring his inventory to 120 percent of the dollar amount of his average, end of the month inventory during the fourth calendar quarter of 1950, or to a practicable minimum working inventory as defined by NPA Reg. 1, as amended, whichever is less. No inventory stocks obtained by use of the DO-91P rating shall be sold, used, transferred, or otherwise disposed of, for any purpose other than the maintenance, repair, or operation of a water transportation system, foreign flag vessel, or Ca-

nadian flag vessel, including minor capital additions therefor. Further, any inventory stocks obtained by the use of the DO-91P rating may be used only to fill orders rated with a DO-91P rating.

Sec. 6. Ship repair yard's use of rating, increase of inventory, and inventory limitation—(a) Controlled materials. No ship repair yard shall apply the DO-91P rating to obtain MRO of controlled materials. Ship repair yards will obtain controlled materials in accordance with the provisions of CMP Regs. 1 and 3.

(b) Increase of inventory and inventory limitation on uncontrolled materials. A ship repair yard may apply the DO-91P rating to obtain stocks of inventory of materials other than controlled materials for delivery during the third calendar quarter of 1951 to the extent necessary to bring such inventory to 120 percent of the dollar amount of its average, end of the month inventory of such materials other than controlled materials during the fourth calendar quarter of 1950, or to a practicable minimum working inventory as defined by NPA Reg. 1, as amended, whichever is less. No inventory stocks obtained by use of the DO-91P rating shall be used, sold, transferred, or otherwise disposed of, for any purpose other than the maintenance, repair, or operation of a water transportation system, foreign flag vessel, or Canadian flag vessel, including minor capital additions therefor. Further, any inventory stocks obtained by the use of the DO-91P rating may be used only to fill orders rated with a DO-91P rating.

Sec. 7. Foreign flag vessel's use of rating. The DO-91P rating herein assigned may not be applied to obtain MRO or minor capital additions for foreign flag vessels unless authorized in writing by NPA pursuant to a written application for such authority. Such application shall be made in triplicate on Form NPAF-104 and filed with the National Production Authority, Washington 25, D. C. Where a foreign flag vessel is damaged at sea and cannot continue safely to its own port, either under its own power or otherwise, but is able to reach a port in the United States for repairs, application may be made by telegraph or radiogram stating such facts, the identification of the vessel, and any other facts believed pertinent. Such telegraph or radiogram application shall be supported, as soon as possible, by filing completed Form NPAF-104 in triplicate with NPA.

Sec. 8. Canadian flag vessel's use of rating. Notwithstanding the provisions of NPA Reg. 3, as amended, Canadian flag vessels shall apply for assistance in connection with MRO and minor capital additions in the same manner as provided in section 7 of this order and, when authorized, shall apply the DO-91P rating and not the DO-47 rating authorized by said Reg. 3.

Sec. 9. Application and certification of rating—(a) By water transportation system consumer and supplier. The DO

rating may be applied by a water transportation system consumer or supplier by placing on an order, or on a separate piece of paper attached to the order, the symbol "DO-91P," together with the words "Certified under NPA Order M-70 and NPA Reg. 2." Such certification shall be signed as prescribed in section 8 of NPA Reg. 2. This certification constitutes a representation to the recipient and to NPA that the person using the DO-91P rating is authorized to use it as provided in this order.

(b) By ship repair yard. (1) The DO rating and certification on an order by a ship repair yard for materials other than controlled materials shall be applied and certified in accordance with paragraph (a) of this section.

(2) The DO rating and certification on an order by a ship repair yard for controlled materials shall be applied and certified in accordance with paragraph (a) of this section and, in addition, the certification shall contain the serial number assigned by NPA in granting the assistance.

(c) By foreign flag and Canadian vessels. The DO rating and certification by a foreign flag or Canadian vessel shall be applied and certified in accordance with paragraph (a) of this section and, in addition, the certification shall contain the serial number assigned by NPA in granting the assistance.

Sec. 10. Limitation on application of rating. No person shall apply the DO-91P rating to obtain material:

(a) For any unauthorized purpose or in amounts greater than required for an authorized purpose under this order.

(b) Which can be obtained within the time required without the use of a rating.

(c) The use of which can be eliminated without serious loss of efficiency by substitution of less scarce material.

Sec. 11. Limitation on extension of rating. A supplier or ship repair yard may apply the DO-91P rating assigned by this order and within its limitations, but neither a supplier nor a ship repair yard may extend, either to obtain materials other than controlled materials normally carried in his inventory or to obtain controlled materials, a DO-91P rating received by him from another person.

Sec. 12. Prohibited deliveries. No person shall accept an order for, or sell, deliver, or cause to be delivered, material which he knows, or has reason to believe, will be accepted, held, or used in violation of any provision of this order.

Sec. 13. Application to other orders and regulations. The provisions of NPA Reg. 4, as amended, relating to MRO and minor capital additions, are superseded to the extent that they are inconsistent with this order, except that a DO-91P rating may not be applied under this order to the items listed in list A of NPA Reg. 2, or table I of NPA Reg. 4, as they may be amended from time to time. The provisions of NPA

Reg. 3, as amended, relating to MRO and minor capital additions for persons located in Canada, are superseded to the extent that they are inconsistent with this order.

Sec. 14. Records, reports, audit, and inspection. (a) Each person participating in any transaction covered by this order shall retain in his files, for at least 2 years, records of receipts, deliveries, inventory, and use, in sufficient detail to permit an audit that determines for each transaction that the provisions of this order have been met. This does not specify any particular accounting method, nor does it require alteration of the system of records customarily maintained, provided the system provides an adequate basis for audit. Records may be retained in the form of microfilm or other photographic copies instead of the originals.

(b) All records required by this order shall be made available at the usual place of business where maintained for inspection and audit by duly authorized representatives of the National Production Authority.

(c) Persons subject to this order shall make such records and submit such reports to the National Production Authority as it shall require, subject to the terms of the Federal Reports Act of 1942 (5 U. S. C. 139-139F).

Sec. 15. Applications for adjustment or exception. Any person affected by any provision of this order may file a request for adjustment or exception upon the ground that such provision works an undue or exceptional hardship upon him not suffered generally by others in the same trade or industry, or that its enforcement against him would not be in the interest of the national defense or in the public interest. In examining requests for adjustment claiming that the public interest is prejudiced by the application of any provision of this order, consideration will be given to the requirements of the public health and safety, civilian defense, and dislocation of labor and resulting unemployment that would impair the defense program. Each request shall be in writing and in triplicate, shall set forth all pertinent facts and the nature of the relief sought, and shall state the justification therefor. More particularly, the applicant shall fully describe the nature of his business or other activity, indicating any seasonal or other unusual features, products made or distributed, or services or other activities performed, and the quarterly volume of such business or other activity since January 1, 1950. The applicant shall state the total amount spent for MRO in each quarter since January 1, 1950, and, if increase in quota is requested, specify the amount of increase requested.

Sec. 16. Communications. All communications concerning this order shall be addressed to the National Production Authority, Washington 25, D. C. Ref: M-70.

Sec. 17. Violations. Any person who

willfully violates any provision of this order or any other order or regulation of NPA or who willfully conceals a material fact or furnishes false information in the course of operation under this order is guilty of a crime and, upon conviction, may be punished by fine or imprisonment, or both. In addition, administrative action may be taken against

such person to suspend his privilege of making or receiving further deliveries of materials or using facilities under priority or allocation control and to deprive him of further priorities assistance.

NOTE: All reporting and record-keeping requirements of this order have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

NOTE: SEE COMMERCIAL FISHERIES REVIEW, MAY 1951, PP. 59-60.

This order shall take effect on June 19, 1951.

NATIONAL PRODUCTION
AUTHORITY,

MANLY FLEISCHMANN,
Administrator.



Economic Stabilization Agency

SALARY STABILIZATION BOARD AND DIVISION ORGANIZED: With respect to stabilization of salaries of persons who are employed in executive, administrative, professional, or outside salesmen capacities and who are not represented by duly recognized or certified labor organizations, General Order 8 issued on May 10 by the Economic Stabilization Agency redelegates these functions to the Salary Stabilization Board.

The full text of the order follows:

SALARY STABILIZATION BOARD AND SALARY STABILIZATION DIVISION

ORGANIZATION

Sec.

1. Purpose.
2. Legal basis.
3. Organization.
4. Delegation of authority.
5. Functions of the Salary Stabilization Board.
6. Functions of the Salary Stabilization Division.
7. Administrative Services.
8. Effect on other orders.

SECTION 1. Purpose. The purpose of this order is to establish a Salary Stabilization Board and a Salary Stabilization Division and to define their functions.

Sec. 2. Legal basis. (a) The basic authority for the establishment of a program of wage and salary stabilization is contained in Title IV of the Defense Production Act of 1950 (Pub. Law 774, 81st Cong.). This authority is implemented by the terms of Executive Order No. 10161 of September 9, 1950; Executive Order No. 10182 of November 21, 1950; Executive Order No. 10205 of January 3, 1951; and Executive Order No. 10233 of April 21, 1951.

(b) Executive Order No. 10161 of September 9, 1950 (15 F.R. 6105) authorizes the Economic Stabilization Administrator to define the internal organization of the Economic Stabilization Agency.

Sec. 3. Organization—(a) Salary Stabilization Board. There shall be a Salary Stabilization Board which shall consist of three public members, one of whom shall be designated as Chairman. The Chairman of the Wage Stabilization Board shall serve as an ex-officio non-voting member of the Salary Stabilization Board, advising the Board in respect to the terms of Section 5 (b) of this order.

(b) **Salary Stabilization Division.** There is hereby established a Salary Stabilization Division. The head of the

Division shall be the Chairman of the Salary Stabilization Board. He shall be assisted by an Executive Director who shall be in charge of the Division in the absence of the Chairman.

Sec. 4. Delegation of authority. (a) The functions delegated to the Economic Stabilization Administrator by the provisions of Part IV of Executive Order No. 10161 of September 9, 1950, as amended by Executive Order No. 10233, dated April 21, 1951, with respect to stabilization of salaries and other compensation of persons who are employed in bona fide executive, administrative, professional or outside salesmen capacities, as each of such terms is defined in Section 6 (b) of this order and who in their relationships with their employer are not represented by duly recognized or certified labor organizations, are hereby redelegated to the Salary Stabilization Board.

(b) There is redelegated to the Chairman, Salary Stabilization Board, such authority of the Administrator under the Defense Production Act of 1950 pursuant to sections 902 and 903 of Executive Order No. 10161 of September 9, 1950, and, except as redelegation may be prohibited therein, such authority of the Administrator pursuant to Executive Order No. 10182 of November 21, 1950, as amended by Executive Order No. 10205 of January 3, 1951, as is necessary to carry out the functions of the Salary Stabilization Board and of the Salary Stabilization Division.

Sec. 5. Functions of the Salary Stabilization Board. (a) Subject to supervision by the Economic Stabilization Administrator, the functions of the Salary Stabilization Board shall be to:

(1) Determine the substantive policies to govern the salary stabilization program, including basic salary stabilization regulations and orders; and

(2) Make such recommendations to the Economic Stabilization Administrator

regarding stabilization policies as it may deem appropriate.

(b) In the exercise of its responsibilities and functions, the Salary Stabilization Board shall conform to the regulations, policies, orders and decisions of the Wage Stabilization Board to the fullest practicable extent, to provide a uniform and coordinated program for the stabilization of all wages, salaries, and other compensation of employees under the jurisdiction of both Boards.

Sec. 6. Functions of the Salary Stabilization Division. (a) The Salary Stabilization Division shall have the following duties and functions:

(1) **Regulations and policies.** Administer and enforce the salary stabilization program in conformance to the established policies of the Salary Stabilization Board;

(2) **Requests for rulings.** Receive requests for rulings concerning the application and interpretation of regulations, policies, and orders and make authoritative rulings thereon;

(3) **Application for approval and adjustments.** Receive, process and make authoritative disposition of applications or petitions for approval of increases in or adjustment of such salaries where approval is required;

(4) **Reports and records.** Receive, process and take such action as may be necessary in respect to reports and records which may be required;

(5) **Information and education.** Formulate and conduct informational and educational programs to inform the public regarding the salary stabilization program;

(6) **Compliance.** Make authoritative determinations in respect to whether a salary payment is in contravention of law, regulations, or policies of the Salary Stabilization Board and take such action in respect thereto as may be authorized and appropriate; and

(7) **Board secretariat.** Provide necessary administrative staff and service

facilities for the Salary Stabilization Board, including any panels which the Board may establish.

(b) *Definition.* In applying the terms of Section 4 above, the terms "outside salesmen" and "bona fide executive, administrative, or professional capacity" shall have the same meaning as provided by regulations under section 13 (a) (17) of the Fair Labor Standards Act, as amended, except insofar as the Board, with the concurrence of the Chairman of the Wage Stabilization

Board, may determine that certain categories of such employees properly should be under the jurisdiction of the Wage Stabilization Board.

Sec. 7. *Administrative services.* The Salary Stabilization Board and Salary Stabilization Division shall share the administrative service facilities of the Wage Stabilization Board relating to budget, fiscal, personnel, supply, space, and other administrative management matters.

Sec. 8. *Effect on other orders.* Any

other orders or parts of orders the provisions of which are inconsistent with the provisions of this order are hereby superseded or amended accordingly. General Order No. 3 is specifically superseded to the extent that it is inconsistent herewith.

Issued: May 10, 1951.

Effective: May 10, 1951.

ERIC JOHNSTON,
Economic Stabilization Administrator.

OFFICE OF PRICE STABILIZATION

FROZEN FISH AND SHELLFISH EXEMPTED FROM GENERAL CEILING PRICE REGULATION: All frozen fish and shellfish were exempted from the General Ceiling Price Regulation (GCPR) by Amendment 11 to this regulation issued by the Office of Price Stabilization on May 17.

It would appear that this amendment exempts frozen fish and shellfish at all levels of distribution--production, wholesale, retail, etc. Frozen round, drawn, and dressed fish; frozen fillets and steaks; and frozen shellfish, including shucked clams and oysters are exempted from the General Ceiling Price Regulation. However, frozen or unfrozen smoked or cured fishery products, including salted and dried fish; frozen breaded shrimp or fillets; and frozen cooked or prepared fish and shellfish are still in their former category and are apparently governed by the Manufacturers' Ceiling Price Regulation 22.

The full text of the amendment follows:

FROZEN FISH AND SHELLFISH

Pursuant to the Defense Production Act of 1950 (Pub. Law 774, 81st Cong.), Executive Order 10161 (15 F. R. 6105), and Economic Stabilization Agency General Order No. 2 (16 F. R. 738) this amendment 11 to the General Ceiling Price Regulation (16 F. R. 808) is hereby issued.

STATEMENT OF CONSIDERATIONS

This amendment exempts frozen fish and shellfish from the General Ceiling Price Regulation. Fresh fish and sea food, because of the unusual marketing factors involved and their seasonal and perishable characteristics, are subject to marked price fluctuations. It was not deemed feasible, therefore, to control fresh fish by the general freeze. Traditionally, fresh and frozen fish are in the same marketing category and move in the same channels of distribution. They are sold competitively with each other. Fresh fish is "frozen" primarily to counteract its perishability and to provide more stable distribution control. Since fresh and frozen fish are substantially identical, uniformity of treatment is desirable. Preferential treatment results in undesirable departures from normal trade practices.

The present exemption of fresh fish from the General Ceiling Price Regula-

tion with frozen fish remaining under price control has resulted in inequities to segments of the fish industry and maladjustments in marketing practices. Some producers of frozen fish in certain areas were able, prior to the base period, to purchase fresh fish at abnormally low prices and the prices of frozen fish during the base period reflected these abnormal purchases. When controls were placed upon frozen fish without the imposition of similar controls upon fresh fish, these producers were adversely affected.

This distortion of the normal price relationship between fresh and frozen fish has created a problem of geographical distribution. Coastal states are receiving more than their normal supply of fresh fish while inland states (where fresh fish cannot be shipped) are receiving abnormally small supplies of frozen fish. This dislocation of distribution is depriving the public in the areas affected of a low-priced protein food and will materially injure many retail outlets who have in the last few years built up their frozen fish sales and who have no present facilities for the handling of fresh fish.

Stocks of frozen fish in 1950 were the largest ever reported. Present cold storage stocks are the heaviest in history. As of March 1, 1951, there were 106 million pounds of fish in storage as compared to 105 million pounds for the

corresponding period last year. The maximum production season for all fish is now approaching. Import conditions seem very favorable and should substantially increase the market supply. The fact that supplies are ample makes it possible to restore the normal relationship between fresh and frozen fish without material increases in price. Some increases may be anticipated in those cases where ceilings are abnormally low but these are justified in order to maintain future frozen fish production at desirable levels.

For these reasons the Director of Price Stabilization finds that the exemption of frozen fish and shellfish from the provisions of the General Ceiling Price Regulation will be in accord with the objective of the Defense Production Act.

AMENDATORY PROVISIONS

Section 14 (s) (8) of the General Ceiling Price Regulation is hereby amended to read as follows:

(8) Fresh fish, seafood and game and frozen fish and shellfish.

Effective date: This amendment shall be effective May 22, 1951.

MICHAEL V. DISALLE,
Director of Price Stabilization.

MAY 17, 1951.

* * * * *

CEILING PRICES FOR CERTAIN SALES AT RETAIL AND WHOLESALE: Pending issuance of a general wholesaler regulation, the Office of Price Stabilization on May 28 took interim action to permit adjustment of some wholesale and retail ceiling prices by sellers still pricing under the General Ceiling Price Regulation (GCPR) by issuing Supplementary Regulation 29 to GCPR (Ceiling Prices for Certain Sales at Retail and at Wholesale). This regulation became effective May 28.

Some fishery products and supplies are still under GCPR. This action is not an across-the-board lifting of the GCPR freeze. Rather, it is of limited application, taken to meet two urgent needs.

1. IT PROVIDES FOR A FOLLOW-THROUGH ON THE UPWARD AND DOWNWARD CHANGES IN PRICES EXPECTED TO RESULT FROM OPERATION OF THE MANUFACTURERS' REGULATION (CPR 22) AND OTHER SIMILAR MANUFACTURERS' REGULATIONS WHICH HAVE BEEN OR WILL BE ISSUED.

In this situation, a wholesaler or retailer buying from a manufacturer who has increased his price under CPR 22, or similar regulations, may recompute his ceiling price upward. Likewise, if the manufacturer has decreased his price, the wholesaler or retailer must recompute his ceiling price downward. He does this by applying to his new net invoice cost the percentage markup which his freeze price yielded over his base period cost.

2. IT TAKES WHOLESALERS AND RETAILERS OUT OF SQUEEZES IN WHICH THEY WERE CAUGHT BY THE GCPR OF JANUARY 26 WHICH FROZE PRICES AT THE HIGHEST DELIVERED PRICE IN THE BASE PERIOD DECEMBER 19, 1950, THROUGH JANUARY 25, 1951. A TYPICAL SQUEEZE SITUATION WHICH THIS ACTION IS INTENDED TO RELIEVE IS WHERE A SELLER, AT THE TIME OF THE GCPR FREEZE, HAD NOT YET RAISED HIS OWN PRICE TO REFLECT A HIGHER PRICE CHARGED BY HIS SUPPLIER. THUS HE WAS CAUGHT WITH A CEILING TOO LOW TO REFLECT IN FULL THE COST OF REPLACING HIS STOCKS.

The regulation relieves these squeezes by permitting wholesalers and retailers to use their base period markups over their supplier's new higher selling prices.

This interim action applies only in the two situations described above. It is not intended to apply broadly as will a more permanent general wholesalers' regulation. But, OPS said, since it is clear that no attempt will be made in any permanent wholesaler regulation to perpetuate reduced markups resulting from the random and uneven operation of the replacement squeeze, correction of this situation at once seemed desirable. Also, action to take account of price changes resulting from CPR 22 and similar manufacturers' regulation is urgently needed.

Retailers may recompute their ceiling prices upward on a commodity where a wholesaler has increased his price to the retailer under this supplementary regulation. Likewise, the retailer must recompute his ceiling price downward on a commodity, if the wholesaler has reduced his price under this supplementary regulation.

Examples of computing price adjustments are contained in the regulation.

The regulation permits single adjustments of GCPR prices rather than providing any change in the method of pricing. Thus it does not provide continuing relief, but only single recalculations to offset increases in suppliers' prices.

This action does not apply to most food commodities; in most cases distributors are covered by CPR's 14, 15, and 16. The relatively small inventories carried by most food distributors, has tended to lessen the replacement squeeze in the food field. In addition, OPS is engaged in extending its specific regulations with respect to food distributors. However, some fishery products and supplies are still under GCPR either on a mandatory or voluntary basis.

Another provision in the new supplementary regulation permits a manufacturer who customarily suggested uniform resale prices at wholesale for his branded commodities, and which commodities have customarily been sold at wholesale at those prices, to continue that practice. The manufacturer must submit to OPS for approval his suggested wholesale prices before they can be put into effect.

* * * * *

SPECIFIC CEILING PRICE FOR FISH OILS ESTABLISHED: A specific ceiling price of 16 cents a pound f.o.b. producer's plant has been established for leading types of crude fish oils by Amendment 7 to Ceiling Price Regulation 6, issued by the Office of Price Stabilization on May 15. The full text of the amendment follows:

CPR 6—FATS AND OILS
FISH OIL

Pursuant to the Defense Production Act of 1950 (Pub. Law 774, 81st Cong.), Executive Order 10161 (15 F. R. 6105), and Economic Stabilization Agency General Order No. 2 (16 F. R. 738), this Amendment 7 to Ceiling Price Regulation 6 is hereby issued.

STATEMENT OF CONSIDERATIONS

This amendment establishes a specific ceiling price of 16¢ a pound for leading types of crude fish oil. It provides that sellers of other grades are to apply normal market differentials to the 16¢ price in order to arrive at their ceilings for those grades. The basic purposes achieved by this amendment are to bring fish oil prices into line with those of competing oils and to eliminate the differences in ceiling prices which prevail from one seller to another under the General Ceiling Price Regulation. The issuance of this amendment at the present time is particularly important since the fishing fleets will shortly be going out for the current season and a firm basis must be provided to permit the fish oil producers to contract for the catch.

From a technical point of view, fish oils may be used in a wide variety of products. Of the total production of 166 million pounds in the United States last year, 77 million pounds were exported. In foreign countries these oils are principally used in such edible products as margarine and shortening. In this country, by contrast, the remaining supply is used almost entirely for industrial purposes. To determine logical ceiling prices for fish oils, therefore, attention must be focused primarily upon competitive relationships to other industrial oils.

A review of the ceiling prices established by sellers under the General Ceiling Price Regulation established the fact that only scattered sales were made in the base period, December 19, 1950 to January 25, 1951. This base period was unrealistic with respect to these oils since it came well past the end of the marketing year for the bulk of the supply from the 1950 catch. Those who made sales in the base period established ceilings around the 18¢ level, others who did not sell in the base period established these

18¢ ceilings for later sales under section 6 of the GCPR.

At the 18¢ level, fish oils were clearly out of line with the prices of competing industrial oils and fats.

The leading domestic use of fish oils is in the paint and varnish industry where, after removing the stearine and cold pressing, they compete with raw linseed oil, treated soybean oil, and other oils in the drying oil class. Detailed cost analyses used in the industry indicate that fish oils cannot be priced at more than about 16¢ and remain on an equal competitive basis with these drying oils.

A second channel of use of fish oils is in the manufacture of fatty acids and in this channel they compete with tallow. Analyses by this Office indicates that on a 16¢ crude basis, fish oil fatty acids will be in a fair competitive position as against animal fatty acids.

While the 16¢ ceilings represent a reduction from somewhat higher ceiling prices established under GCPR, they nevertheless are double the average obtained from the 1950 supply.

In formulating this regulation, the Director obtained the views of the members of an Industry Advisory Committee, convened to consider this problem and in addition sought advice from a number of individual producers and users. He has given full consideration to all the recommendations made by these industry representatives. In his judgment the provisions of this regulation are generally fair and equitable and are necessary to effectuate the purposes of Title IV of the Defense Production Act of 1950.

So far as practicable the Director of Price Stabilization gave due consideration to the national effort to achieve maximum production in furtherance of the objective of the Defense Production Act of 1950; to prices prevailing during the period from May 24, 1950, to June 24, 1950, inclusive; and to relevant factors of general applicability.

AMENDATORY PROVISIONS

Ceiling Price Regulation 6 is amended by adding a new section 18, to read as follows:

SEC. 18. Ceiling prices for the sellers of fish oils. The ceiling prices of fish oils shall be as follows:

(a) Fish oils: Loaded on buyers' tank cars, tank trucks, or barge:

	Cents per pound
Menhaden oil, crude, f. o. b. producer's plant, Atlantic and Gulf Coasts.....	16
Sardine oil, crude, f. o. b. producer's plant, Atlantic Coast.....	16
Sardine oil, crude, f. o. b. producer's plant, Pacific Coast.....	16
Pilchard oil, crude, f. o. b. producer's plant, Pacific Coast.....	16
Herring oil, crude, f. o. b. Seattle.....	16
Herring oil, crude, f. o. b. producer's plant, Atlantic Coast.....	16
Crude tuna oil, mackerel oil, red fish oil, seal oil, hairyback fish oil, bottom fish oil, or other fish body oils produced by the reduction of the whole fish or the offal of such fish, f. o. b. plant of production.....	16

(b) If you import any of the oils specified in paragraph (a) of this section, your ceiling prices for the sale of such fish oils shall be the above ceiling prices, f. o. b. port of entry. These ceiling prices include all import duties and taxes.

(c) The usual and customary differentials for grades above or below these prices for basic grades shall continue to apply.

(d) The usual and customary differentials for types of conveyance or container shall continue to apply.

(e) Sales contracts for the grade and type of fish oil to be delivered, after the effective date of this amendment may be performed only at a price that does not exceed the ceiling prices set forth in paragraph (a) of this section.

(f) If you are a seller of fish oils to be sold at any of the price differentials specified in paragraphs (c) and (d) of this section, you must file, within thirty days from the effective date of this order, with the Fats and Oils Branch, Food and Restaurant Division, Office of Price Stabilization, Washington 25, D. C., a schedule of prices which will indicate the customary industry differentials from the ceiling price of crude oil which you intend to apply in accordance with paragraphs (c) and (d) of this section.

(g) If you have customarily charged a premium for sales of fish oil to be used as a carrying medium for vitamins, you may apply in writing to the Fats and Oils Branch, Food and Restaurant Division, OPS, Washington, D. C., for an adjustment in your ceiling price for such sales.

This application must be filed in duplicate and contain all pertinent information indicating the name and address of the buyer; documentary evidence that you have customarily charged the premium; and the proposed selling price for which you are seeking adjustment.

(Sec. 704, Pub. Law, 81st Cong.)

NOTE: The record keeping and reporting requirements of this regulation have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

Effective date. This amendment shall be effective May 19, 1951.

MICHAEL V. DiSALLE,
Director of Price Stabilization.

MAY 15, 1951.

* * * * *

SMALL RETAILERS HAVE CHOICE OF PRICING UNDER GCPR OR CPR 7: Many small retailers throughout the country have a choice between pricing their goods under CPR 7 or continuing for the time being to price under the General Ceiling Price Regulation (GCPR) issued last January. This choice has been given to retailers by the Office of Price Stabilization by Amendment 5 to Ceiling Price Regulation 7, issued May 28.

Whether a retailer is eligible to choose between CPR 7 and GCPR depends upon his sales volume and the types of commodities sold.

Among the numerous types of retailers listed are those handling sporting goods: fishing tackle; fishing rods; and other fishing accessories. If a retailer handling these types of goods has a sales volume (net dollar volume) of \$60,000, that retailer does not have to file a pricing chart under CPR 7, but may elect to price his goods under GCPR issued last January. If these same retailers handle other goods besides those that fall under the sporting goods category and an individual retailer's total sales of everything in his store are less than \$100,000, that retailer does not have to file a pricing chart under CPR 7, but may elect to price under GCPR. Those retailers who were eligible and elected to price under GCPR were not required to file a price chart under CPR 7 by the deadline date established by OPS.

It is believed that in addition to retailers who handle sporting goods, some grocery stores may also be eligible to choose between CPR 7 and GCPR.

Retailers of sporting goods were brought under CPR 7 by Amendment 2^{1/2} issued on April 5.

1/SEE COMMERCIAL FISHERIES REVIEW, MAY (1951), P. 63.

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METAL CONTAINERS COST-OF-MATERIALS CUT-OFF DATE EXTENDED: Food packers who use metal containers are being given the same cost-of-materials cut-off date under the Office of Price Stabilization's Manufacturers Ceiling Price Regulation (CPR 22) as those who use glass containers.

CPR 22 set March 15, 1951, as the cut-off date for calculating ceiling prices of covered food products on the basis of increased cost of glass containers, while the date for calculating increased costs of metal containers was limited to December 31, 1950.

Amendment No. 4 to CPR 22, issued May 25 and effective May 28, extends the cut-off date for increased costs of metal containers to March 15 to correspond with the glass container cut-off date.

* * * * *

SHIPS INCLUDED UNDER CPR 30: CPR 30--Machinery and Related Manufactured Goods--was amended on June 20 by the Office of Price Stabilization to include ships, among

other new categories of manufactured industrial goods. Amendment 4 to CPR 30 became effective June 19. Because the manufacturers of ships have pricing problems similar to others covered by the regulation, ships were included. Ships are defined as "any ship or boat powered by an inboard engine and barges and cargo carrying barges whether powered or not."

The amendment to the order permits manufacturers to consider their increased cost, between the end of their base periods and March 15, 1951, caused by required payments under the Federal Insurance Contributions Act, the Federal Unemployment Tax Act, and any state or local unemployment compensation law. It is also made clear that retroactive wage increases or fringe benefits granted after March 15, even though before the date the regulations were issued and even though under prior contracts, cannot be included in labor cost adjustments. In addition, the amendment provides additional optional methods for determining the costs of manufacturing material.

Sales of ships by others than manufacturers are covered by GCPR.

* * * * *

CEILING PRICES ON MARINE FEEDS (FISH MEAL, SCRAP, AND SOLUBLES): Uniform dollars and cents ceiling prices for fish scrap, fish meal, fish solubles, and specialty fish feed products at the processor, importer, and distributor levels were established by the Office of Price Stabilization on May 25.

A special Ceiling Price Regulation (CPR 39) was issued for these products to smooth out price variations within the industry under the General Ceiling Price Regulation freeze. The new order became effective May 29, 1951.

Fish scrap and fish meal ceiling prices are established on the basis of protein content, and they increase as the protein content increases.

The importer-processor price chart is the same for Atlantic and Gulf coasts, and Pacific coast. It starts at \$90.40 a ton, bulk, f.o.b. for meal and \$84.40 for scrap of 40 percent protein content. The \$6.00 difference allows a margin to processors of scrap into meal.

For each additional percentage point of protein content, an addition of \$2.26 per ton in price is permitted.

Since the standard practice on the Atlantic and Gulf coasts is to price scrap and meal on the basis of 60 percent protein content, no premium is allowed for products with more than 60 percent protein.

Standard practice on the Pacific coast is to price scrap and meal according to the actual protein content and without regard to a standard base. The \$2.26 rate of increase per percentage point of protein content applies to West Coast scrap and meal with protein content between 40 and 80 percent. No premium is permitted on Pacific Coast sales for protein content above 80 percent.

Distributor prices are based on the markups of individual distributors which prevailed in the July 1, 1949, to June 24, 1950, base period in the regulation.

The ceiling price for fish solubles of 50 percent solids by weight is set at 5 cents a pound. This was the most frequent price quoted during the General Ceiling Price Regulation base period.

The full text of CPR 39 without the "Statement of Considerations" follows:

REGULATORY PROVISIONS

Sec.

1. What this regulation does.
2. Applicability; exemptions.
3. F. o. b. ceiling prices for sales by processors.
4. F. o. b. ceiling prices for sales by importers.
5. F. o. b. loading point ceiling prices for sales by distributors.
6. F. o. b. ceiling prices for sales at retail.
7. F. o. b. ceiling prices for sales in less than carload or tank car quantities.
8. Ceiling prices for delivered sales.
9. Charges for sacks or other containers.
10. Sellers who cannot price under other sections.
11. Definitions.
12. Certificates and tags.
13. Records.
14. Prohibitions; penalties.
15. Petitions to amend this regulation.

AUTHORITY: Sections 1 to 15 issued under Sec. 704, Pub. Law 774, 81st Cong. Interpret or apply Title IV, Pub. Law 774, 81st Cong., and E. O. 10161, Sept. 9, 1950, 15 F. R. 6105; 3 CFR, 1950 Supp.

SECTION 1. What this regulation does. This regulation establishes ceiling prices for fish scrap, fish meal, fish solubles and certain specialty fish feed products at the processor, importer and distributor levels. This regulation does not establish prices for crab meal, shrimp meal, dried fish solubles product, homogenized condensed fish, fish residue meal or fish solubles processed and sold for use as fertilizer. These new ceiling prices, after the effective date of this regulation, will supersede the ceiling prices established under any other price regulations or orders heretofore issued by the Office of Price Stabilization.

Sec. 2. Applicability; exemptions—(a) Applicability. The provisions of this regulation shall apply to the 48 States of the United States and the District of Columbia.

(b) Exemptions—(1) Export sales. This regulation shall not apply to export sales. The General Ceiling Price Regulation or other applicable regulations shall govern such sales.

(2) Sales at retail by persons other than processors, importers or distributors. This regulation shall not apply to sales at retail by persons other than processors, importers or distributors. The General Ceiling Price Regulation is applicable to such sales.

(3) Manufactured feeds in which a marine feed product is an ingredient. This regulation shall not apply to sales by manufacturers, wholesalers or retailers of manufactured feeds in which fish meal, fish solubles or a specialty fish feed product is an ingredient. Supplementary Regulation 7 to the General Ceiling

Price Regulation or other applicable regulations shall govern such sales.

(4) Sales and deliveries made pursuant to prior contracts. This regulation shall not apply to sales and deliveries made pursuant to contracts entered into before the effective date of this regulation if such contracts complied with the ceiling price provisions of the then applicable regulations of the Office of Price Stabilization.

Sec. 3. F. o. b. ceiling prices for sales by processors—(a) Ceiling prices for fish meal and fish scrap in carload quantities, per ton, bulk, f. o. b. processing plant or at the processor's customary loading point—(1) Schedule of ceiling prices. If you are a processor, your ceiling prices for sales of fish meal and fish scrap in carload quantities, per ton, bulk, f. o. b. your processing plant or customary loading point are determined in accordance with the appropriate columns of the schedule set forth in Table A.

TABLE A

	Fish Meal		Fish Scrap	
	Atlantic and Gulf coast points	Pacific coast points	Atlantic and Gulf coast points	Pacific coast points
40.....	90.40	90.40	84.40	84.40
41.....	92.66	92.66	86.66	86.66
42.....	94.92	94.92	88.92	88.92
43.....	97.18	97.18	91.18	91.18
44.....	99.44	99.44	93.44	93.44
45.....	101.70	101.70	95.70	95.70
46.....	103.96	103.96	97.96	97.96
47.....	106.22	106.22	100.22	100.22
48.....	108.48	108.48	102.48	102.48
49.....	110.74	110.74	104.74	104.74
50.....	113.00	113.00	107.00	107.00
51.....	115.26	115.26	109.26	109.26
52.....	117.52	117.52	111.52	111.52
53.....	119.78	119.78	113.78	113.78
54.....	122.04	122.04	116.04	116.04
55.....	124.30	124.30	118.30	118.30
56.....	126.56	126.56	120.56	120.56
57.....	128.82	128.82	122.82	122.82
58.....	131.08	131.08	125.08	125.08
59.....	133.34	133.34	127.34	127.34
60.....	135.60	135.60	129.60	129.60
61.....	(1)	137.86	(1)	131.86
62.....		140.12		134.12
63.....		142.38		136.38
64.....		144.64		138.64
65.....		146.90		140.90
66.....		149.16		143.16
67.....		151.42		145.42
68.....		153.68		147.68
69.....		155.94		149.94
70.....		158.20		152.20
71.....		160.46		154.46
72.....		162.72		156.72
73.....		164.98		158.98
74.....		167.24		161.24
75.....		169.50		163.50
76.....		171.76		165.76
77.....		174.02		168.02
78.....		176.28		170.28
79.....		178.54		172.54
80.....		180.80		174.80

¹ No increase in ceiling price permitted for percentage of protein over 60.

(2) Adjustment in ceiling price for fractions of a unit percentage of protein content. If the protein content of your lot of fish meal or fish scrap contains a fraction of a unit percentage of protein, you shall round out such fraction to the

nearest half unit percentage and determine and adjust your per ton, bulk, f. o. b. ceiling prices as follows:

(i) Determine your per ton ceiling price for the number of whole units percentage of protein of your meal or scrap in accordance with the appropriate column of Table A, above.

(ii) Make the following adjustments in your ceiling price for fractions in accordance with Table B:

TABLE B

Fraction of a unit percentage of protein (expressed in decimals)	Adjustments in per ton Ceiling Price
0.0-0.25.....	No adjustment in your ceiling price
0.26-0.75.....	Add \$1.13 per ton to your ceiling price
0.76-0.99.....	Add \$2.26 per ton to your ceiling price

(3) Ceiling prices on failure to fulfill minimum protein guarantees. If you fail to fulfill your minimum protein guarantees with respect to any lot of fish meal or fish scrap, your per ton, bulk, f. o. b. ceiling price is the ceiling price based upon the actual units percentage of protein or fraction thereof, as determined under subparagraphs (1) and (2) of this paragraph.

(b) Ceiling prices for fish solubles in tank car quantities, f. o. b. the processor's plant or customary loading point. If you are a processor, your ceiling prices for sales of fish solubles in tank car quantities; f. o. b. your processing plant or customary loading point are as follows:

(1) **Ceiling price for fish solubles containing 50 percent or more than 50 percent solids by weight.** Your ceiling price for fish solubles containing 50 percent or more than 50 percent solids by weight is 5¢ per pound.

(2) **Ceiling price for fish solubles containing less than 50 percent solids by weight.** If your fish solubles contain less than 50 percent solids by weight, your ceiling price is determined as follows:

(i) From the price of 5¢ per pound deduct 2 percent for each full unit percentage by which the solid content of your particular lot of fish solubles is below 50 percent.

(ii) The calculation established in subdivision (i) of this subparagraph, constitutes your ceiling price.

(3) Adjustments in ceiling price, determined under subparagraph (2) for fractions of a unit percentage of solids by weight. If the solids content of your lot of fish solubles contains a fraction of a unit percentage of solids by weight, you

shall round out such fraction to the nearest half unit percentage and adjust your ceiling price in the following manner:

(i) Determine your per pound ceiling price for the number of whole units percentage of solids by weight, in accordance with subparagraph (2), of this paragraph.

(ii) Make the following adjustments in your ceiling price for fractions in accordance with Table C:

TABLE C

Fraction of a unit percentage of protein (expressed in decimals)	Adjustments in per pound Ceiling Price
0.0-0.25-----	No adjustment in your ceiling price.
0.25-0.75-----	Add $\frac{1}{2}$ of a cent to your per pound ceiling price.
0.75-0.99-----	Add $\frac{3}{4}$ of a cent to your per pound ceiling price.

(4) *Ceiling prices on failure to fulfill minimum solids by weight guarantee.* If you fail to fulfill your minimum solids by weight guarantee with respect to any lot of fish solubles, your per pound, f. o. b. ceiling price is the ceiling price based upon the actual units percentage of solids by weight or fraction thereof, as determined under subparagraphs (2) and (3) of this paragraph.

(c) *Ceiling prices for specialty fish feed products, bulk, carload or tank car quantities, f. o. b. processing plant or customary loading point—(1) Per ton, bulk, f. o. b. ceiling prices for specialty products that are solid in form.* If your specialty product is solid in form, your per ton, bulk, f. o. b. ceiling price shall be determined as follows:

(i) Take the per ton, bulk f. o. b. ceiling price for fish meal of a particular percent protein content for the coastal area in which your plant is located or which is nearest to your plant. This ceiling price is to be selected from Table A of this section.

(ii) Determine the average dollars and cents difference between the per ton, bulk, f. o. b. prices you charged for your specialty product in any three consecutive months during the period July 1, 1949 to June 24, 1950, and the average per ton, bulk, market price during the same three months for fishmeal of the same protein content you selected in subdivision (i), of this subparagraph.

The market whose f. o. b. prices you use must be an Atlantic or Gulf Coast market, if you selected an Atlantic or Gulf Coast ceiling price in subdivision (i), of this subparagraph, or a Pacific

Coast market, if you selected a Pacific Coast ceiling price. You are limited, in your calculations, to those markets whose prices or other quotations are listed in the following government or trade publications: The Feed Market Review (published by the U. S. Department of Agriculture); The Feed Situation (published by the U. S. Department of Agriculture); Fishery Products Report (published by the Fish and Wildlife Service, U. S. Department of Interior); Oil, Paint and Drug Reporter (published by the Schnell Publishing Co., Inc., New York City, New York).

In determining your average dollars and cents difference, market prices which are quoted on a per ton basis in sacks shall be converted to a per ton, bulk basis by deducting \$5.50 per ton for sacks. If you charged prices for lots in sacks or other containers, you shall deduct your charge or cost for furnishing such sacks or other containers in order to determine your per ton, bulk, prices.

(iii) Add the dollars and cents difference determined in subdivision (ii), of this subparagraph, to the ceiling price which you selected in subdivision (i) of this subparagraph. The result is your ceiling price.

(2) *Per pound, f. o. b. ceiling prices in tank car quantities for specialty fish feed products that are liquid or semi-liquid in form.* If your specialty fish feed product is liquid or semi-liquid in form, your per pound, f. o. b. ceiling price in tank car quantities shall be determined as follows:

(i) Determine the average cents per pound difference between your cents per pound, f. o. b. prices in tank car quantities in any three consecutive months during the period July 1, 1949 to June 24, 1950, and the price of 5 cents per pound.

(ii) Add the cents per pound difference, determined in subdivision (i) of this subparagraph to the price of 5 cents per pound. The result is your ceiling price.

(3) *Filing of Reports.* If you determine your ceiling price for specialty fish feed products under subparagraphs (1) or (2) of this paragraph, you must file the following information with the Director of Price Stabilization, Washington 25, D. C., within 30 days of the effective date of this regulation:

(i) Your name and address;

(ii) The location of your plant or plants at which you process your specialty fish feed product;

(iii) The name of your product, including brand name, if any, and a description of the product, including a statement as to whether it is a solid, liquid or semi-liquid, and any characteristics pertaining to its feeding value.

(iv) A statement showing: The average dollars and cents difference, if your product is solid in form, or the average cents per pound difference, if your product is liquid or semi-liquid in form, which you used in arriving at your ceiling price, together with the list of the months for which such difference was calculated; price lists, invoices or other evidence indicating your f. o. b. prices during the period chosen; and, if your specialty product is solid in form, the market quotations (together with the location of the market, and the name of the publication in which such quotations were listed) which you used in determining the average difference between your prices and such market prices.

(v) Your ceiling price for your specialty fish feed product, as determined under this regulation.

(4) *When you may begin to sell your specialty fish feed product, disapproval of your ceiling price.* You may begin to sell your specialty fish feed product as soon as you have mailed your report pursuant to subparagraph (3) of this paragraph. Thereafter, you may sell your specialty product unless and until notified by the Director of Price Stabilization that your ceiling price has been disapproved or that more information is required. The Director of Price Stabilization may disapprove of your ceiling price if such price is not established in accordance with subparagraph (1) or (2) of this paragraph; or he may disapprove of your ceiling price if he decides, after taking into consideration the nutritional value of your specialty product, among other factors, that your ceiling price is not in line with the prices otherwise established by this regulation.

In the event that more information is required, you may not sell your specialty product until 15 days after mailing the additional information.

In case, however, you sold or offered your specialty product for sale prior to the effective date of this regulation upon the basis of a ceiling price determined under the General Ceiling Price Regulation, you may continue to use your GCPR ceiling price until July 1, 1951, even though your ceiling price determined under this regulation has been disapproved or more information is requested.

Sec. 4. *F. o. b. ceiling prices for sales by importers.* If you are an importer of fish scrap or fish meal your ceiling prices per ton, bulk, f. o. b. port-of-entry, for imported fish meal or fish scrap are as follows:

(a) *Per ton, bulk, f. o. b. ceiling prices for fish scrap or fish meal imported into Atlantic or Gulf Coast ports-of-entry.* If you import fish meal or fish scrap into

the continental United States through an Atlantic or Gulf coast port-of-entry, your ceiling price per ton, bulk, f. o. b. port-of-entry, for each grade of fish meal or fish scrap is the same as the per ton, bulk, f. o. b. ceiling price of Atlantic or Gulf coast processors for fish meal or fish scrap of the same protein content, as determined pursuant to the applicable provisions of section 3 (a) of this regulation.

(b) *Per ton, bulk, f. o. b. ceiling prices for fish scrap or fish meal imported into Pacific coast ports-of-entry.* If you import fish meal or fish scrap into the continental United States through a Pacific coast port-of-entry, your ceiling price per ton, bulk, f. o. b. port-of-entry, for each grade of fish meal or fish scrap, is the same as the per ton, bulk, f. o. b. ceiling price of Pacific coast processors for fish meal or fish scrap of the same protein content, as determined pursuant to the applicable provisions of Section 3 (a) of this regulation.

(c) *Per ton, bulk, f. o. b. ceiling prices for fish scrap or fish meal imported into interior ports-of-entry.* If you import fish meal or fish scrap into the continental United States through an interior port-of-entry, your ceiling price per ton, bulk, f. o. b. port-of-entry shall be determined as follows:

(1) Determine the per ton, bulk, f. o. b. ceiling price for fish meal or fish scrap of the same protein content (under the applicable provisions of section 3 (a) of this regulation) at the Atlantic, Gulf or Pacific Coast processing plant nearest to the interior port-of-entry through which your shipment moves.

(2) Add to the price obtained in subparagraph (1) of this paragraph, the lowest applicable domestic carload freight rate, including tax, from that domestic processing plant to that interior port-of-entry, based on the rates in effect prior to March 15, 1951.

(3) The price computed in subparagraph (2) of this paragraph, constitutes your ceiling price.

Sec. 5. *F. o. b. loading point ceiling prices for sales by distributors—(a) F. o. b. loading point ceiling price.* If you are a distributor, you shall calculate your f. o. b. loading point ceiling price for each product after each customary purchase you make in the following manner:

(1) For each product, determine your average dollars and cents differential between your per ton, or per pound f. o. b. loading point prices (excluding your charges or costs for furnishing sacks or other containers in connection with the sale of any lot which you bought in bulk or in tank car quantities) and your sup-

pliers' per ton or per pound prices to you (including transportation charges paid by you) during any three consecutive months of the period July 1, 1949 to June 24, 1950.

(2) Add this dollars and cents differential, as determined in subparagraph (1) of this paragraph, to the price, per ton or per pound, of your most recent customary purchase (including transportation charges paid by you).

(3) The price determined under subparagraph (2) of this paragraph, constitutes your per ton or per pound f. o. b. loading point ceiling price.

(b) *Ceiling prices for distributors who cannot determine ceiling prices under paragraph (a) of this section.* (1) If you are a distributor and you cannot determine your ceiling price for a product under paragraph (a) of this section, you shall determine your ceiling price, after each customary purchase you make, in the following manner:

(i) Determine the dollars and cents difference between the per ton or per pound f. o. b. ceiling price of your most closely competitive seller of the same class selling the same product to the same class of purchaser and the price per ton or per pound (including transportation charges paid or incurred by you) of that customary purchase which you made at or about the time your most closely competitive seller sold at his ceiling price.

(ii) Add the dollars and cents difference, determined in subdivision (i) of this subparagraph to the price, per ton or per pound of your most recent customary purchase (including transportation paid or incurred by you).

(iii) The price determined under subdivision (ii) of this subparagraph constitutes your ceiling price.

(2) When you may begin to sell; report: (i) You may sell your product at your ceiling price, as determined under this paragraph (b), as soon as you have mailed a report to the Director of Price Stabilization, Washington 25, D. C. You may continue to sell your product at your proposed ceiling price until notified by the Director of Price Stabilization that your proposed ceiling price has been disapproved or that more information is required.

(ii) In case, however, you sold or offered your product for sale prior to the effective date of this regulation upon the basis of a ceiling price determined under the General Ceiling Price Regulation, you may continue to use your GCPR ceiling price until July 1, 1951.

(iii) Your report should state the name and address of your company; the reasons why you cannot determine your price under paragraph (a) of this sec-

tion; the name and address of your most closely competitive seller of the same class; a statement of his ceiling price which you selected together with the date or dates when he sold at that ceiling price, and his differentials to each of his classes of customers; the prices of the customary purchases which you used in determining your ceiling price in accordance with paragraph (b) (1) of this section, together with information concerning the dates thereof, the quantities bought and the names and addresses of your suppliers for such purchases. Your report should also include: A statement of your customary price differentials; your proposed ceiling price; the classes of customers to whom you sell or plan to sell; and a statement showing that your proposed ceiling price will not exceed the ceiling price your customers paid to their customary sources of supply.

(c) *Limitations on distributor markups.* No more than two distributor markups are permitted in connection with the sale of any product. Consequently, if you are a distributor and you buy a lot from your distributor, who, in turn, purchased that lot from his distributor, your ceiling price for that lot is your distributor's price, and you may not add your markup upon resale.

(d) *Ceiling prices for products processed by a distributor.* Even if you are customarily regarded as a distributor, you are deemed to be a processor, with respect to any lot or other quantity of fish meal, fish solubles or a specialty fish feed product which you process or manufacture, and your ceiling price for that lot or other quantity is a processor's ceiling price, as determined under the applicable provisions of this regulation.

Sec. 6. *F. o. b. ceiling prices for sales at retail.* If you are a processor, importer or distributor, and you make a sale at retail, your f. o. b. ceiling price for such sale is your f. o. b. ceiling price, as determined under the applicable provisions of this regulation.

Sec. 7. *F. o. b. ceiling prices for sales in less than carload or tank car quantities.* If, prior to the effective date of this regulation, you customarily sold at an increased price for sales in less than carload or tank car quantities, your f. o. b. ceiling prices for fish scrap, fish meal, fish solubles or specialty fish feed products, when sold in less than carload or tank car quantities, shall be determined as follows:

(a) Determine your f. o. b. ceiling price for the particular product in accordance with the applicable provisions of this regulation.

(b) Add to your f.o.b. ceiling price, the dollars and cents differential between your f.o.b. carload or tank car prices and the f.o.b. prices (excluding your charges or costs for furnishing sacks or other containers in connection with the sale of any lot which you bought in bulk or in tank car quantities) which you customarily charged for each particular quantity and class of buyer during the period July 1, 1949 to June 24, 1950.

(c) The f.o.b. prices, determined under paragraph (b) of this section constitute your f.o.b. ceiling prices for sales in less than carload quantities.

Sec. 8. *Ceiling prices for delivered sales.* Your ceiling price for the delivered sale of any lot is your f. o. b. ceiling price plus the transportation charges paid or incurred by you (excluding loading charges not customarily included in transportation charges) in shipping that lot from its original loading point to its point of final delivery.

Sec. 9. *Charges for sacks or other containers.* If you furnish sacks or other containers in connection with the sale of any lot which you process or buy in bulk or in tank car quantities, you may add to your ceiling price a charge consisting of the price, per sack, or per other container of your most recent customary purchase times the number of sacks or other containers which you furnish.

Sec. 10. *Sellers who cannot price under other sections.* If you are unable to determine your ceiling price for a product under any of the foregoing provisions of this regulation, you may apply in writing to the Director of Price Stabilization, Washington 25, D. C., for the establishment of a ceiling price. This application shall contain an explanation of why you are unable to determine your ceiling price under the provisions of this regulation; all pertinent information describing your product; your proposed ceiling price and the method used by you to determine it; and the reason why you believe the proposed price is in line with the level of ceiling prices otherwise established by this regulation. You may not sell your product until the Director of Price Stabilization notifies you, in writing, of your ceiling price.

Sec. 11. *Definitions.*—(a) *Transportation and shipping terms.*—(1) *Carload quantity.* Carload quantity means any quantity which, if it were moved by rail, would take a carload rate under the applicable railroad tariff requirements.

(2) *Tank car quantity.* Tank car quantity means that quantity which, if it were moved by rail, would take a tank car rate under the applicable railroad tariff requirements.

(3) *Customary loading point.* A customary loading point is any point in the vicinity of a processor's plant where all or a part of his shipments are customarily loaded for delivery.

(4) *Coastal ports of entry.* A coastal port of entry is a port located on the Atlantic, Gulf of Mexico or Pacific Coast and through which products are imported into the continental United States by means of water transportation.

(5) *Interior port of entry.* An interior port of entry is a point located in the interior of the continental United States, through which the original entry of products into the continental United States is made by means of rail or inland waterway transportation.

(b) *Sellers.*—(1) *Processors.* A processor, with respect to a particular lot, means a person who manufactures fish scrap, fish meal, fish solubles or specialty fish feed products either from whole fish, fish cuttings, fish scrap, press-water or fish solubles.

(2) *Distributor.* A distributor, with respect to a particular lot, means a jobber or a wholesaler.

(3) *Jobber.* A jobber, with respect to a particular lot, means a person who buys and takes title to a product covered by this regulation, and who resells the product without having previously unloaded it into a warehouse or store to a person other than a feeder.

(4) *Wholesaler.* A wholesaler, with respect to a particular lot, means a person who buys and takes title to a product covered by this regulation, stores it in a warehouse, and then resells the product without substantially changing its form to a person other than a feeder.

(5) *Most closely competitive seller of the same class.* Your most closely competitive seller of the same class, with respect to any product covered by this regulation, is the seller with whom you are in most direct competition. You are in direct competition with another seller who sells the same type of product to the same classes of purchasers in similar quantities on similar terms and with approximately the same amount of service.

(c) *Marine feed products.*—(1) *Fish scrap.* Fish scrap is the clean, dried, unground tissues of undecomposed whole fish or fish cuttings, either or both, with or without the extraction of part of the oil.

(2) *Fish meal.* Fish meal is the clean, dried, ground tissues of undecomposed whole fish or fish cuttings, either or both, with or without the extraction of part of the oil.

(3) *Fish solubles.* Fish solubles is the product obtained by condensing the

press-water resulting from the extraction of oil from fish.

(4) *Specialty fish feed products.* Specialty fish feed products are those products processed entirely from whole fish, fish cuttings, press-water or fish solubles, either singly or in combination, which, because of the nature of the raw materials used or the processing method employed, have special feeding values.

(5) *Crabmeal.* Crabmeal is the undecomposed, ground dried waste of the crab and contains the shell, viscera and part or all of the flesh.

(6) *Shrimp meal.* Shrimp meal is the undecomposed, ground dried waste of shrimp and contains the head, hull or whole shrimp, either singly or in a mixture.

(7) *Dried fish solubles product.* Dried fish solubles product is the material obtained by drying and grinding the precipitate of fish press-water.

(8) *Homogenized condensed fish.* Homogenized condensed fish is a partially dehydrated, homogeneous product made from whole fish or fish cuttings, either or both, from which a part of the oil may have been removed.

(9) *Fish residue meal.* Fish residue meal is the clean, dried, undecomposed residue from the manufacture of glue from monoly fish.

(d) *Miscellaneous.*—(1) *Sale at retail.* A sale at retail means, with respect to any transaction, a sale to a feeder.

(2) *Feeder.* A feeder, with respect to a particular lot, means a person who uses any product covered by this regulation for feeding animals or poultry.

(3) *You.* The pronoun you, as used in this regulation, indicates the person subject to the regulation.

(4) *Person.* A person includes an individual, corporation, partnership, association, or other organized group of persons, legal successor or representative of any of the foregoing and includes the United States, any agent thereof, any other government, or any of its subdivisions, and any agency of any of the foregoing.

Sec. 12. *Certificates and tags.* Whenever you sell fish meal or fish solubles, a statement of analysis shall accompany your invoice of sale except when you sell in sacks or other containers to which are attached a label or tag showing the guaranteed minimum percentage of protein or solids therein, as the case may be.

Sec. 13. *Records.*—(a) *General provision.* If you make a purchase or sale of fish scrap, fish meal, fish solubles or specialty fish feed products in the course of your trade or business or otherwise deal

therein, after the effective date of this regulation, you shall keep for inspection by the Office of Price Stabilization for a period of not less than two years, accurate records of each such purchase or sale, including the date thereof, the name of your purchaser or seller, the amount sold or purchased, the price paid or received, the grade of fish scrap, fish meal, fish solubles, and the brand and characteristics of the specialty fish feed products you sell or buy, and whether or not the lot sold moved in a carload or tank car quantity shipment. You shall, in the same manner and for the same period of time, keep accurate records of each purchase of sacks and other containers, including the date thereof, the price paid, the name of your supplier, the number, grade and type of such sacks or other containers, and all other records and information upon which you determined your charges for such sacks or other containers pursuant to section 9 of this regulation.

(b) *Wholesalers and jobbers.* If you

are a wholesaler or jobber, you shall, in addition, keep for inspection by the Office of Price Stabilization for a period of not less than two years, all invoices, quotations, receipts, price lists, and other information upon which you determined your average dollars and cents differential for each product you sold, as described in section 5 (a) of this regulation.

(c) *Premiums for sales in less than carload or tank car quantities.* If you have established ceiling prices for sales in less than carload or tank car quantities pursuant to section 7 of this regulation, you shall, in addition, keep for inspection by the Office of Price Stabilization for a period of not less than two years, all invoices, quotations, receipts, price lists and other information upon which you determined your dollars and cents differentials for such sales.

SEC. 14. *Prohibitions; penalties*—(a) *Prohibitions.* On and after the effective date of this regulation you shall not, in the course of business or trade, sell or deliver, or purchase or receive fish scrap,

fish meal, fish solubles, or specialty fish feed products at prices exceeding the ceiling prices established by this regulation.

(b) *Penalties.* If you violate any provision of this regulation, you are subject to the criminal penalties, civil enforcement actions and suits for damages provided for by the Defense Production Act of 1950.

SEC. 15. *Petitions to amend this regulation.* Any person may file a petition for an amendment of general applicability to any provision of this regulation in accordance with the provisions of Price Procedural Regulation No. 1.

Effective date. This regulation is effective May 29, 1951.

NOTE: The record keeping and reporting requirements of this regulation have been approved by the Bureau of the Budget in accordance with the Federal Reports Act of 1942.

MICHAEL V. DISALLE,
Director of Price Stabilization.

MAY 24, 1951.

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GOR 10 PROVIDES ADJUSTMENTS OF CEILING PRICES FOR MANUFACTURERS: General Overriding Regulation 10, issued on May 11 by OPS, permits a manufacturer to apply for an upward adjustment of his ceiling prices established under any other regulation, if as a result of such ceiling prices the manufacturer would be forced to operate at a loss with respect to his over-all manufacturing operations. This regulation does not, however, prevent a manufacturer, who is eligible for an adjustment under some other regulation, from applying for an adjustment under that regulation.

CPR 22--Manufacturers' General Ceiling Price Regulation, issued on April 25, 1951, provides for individual adjustments for manufacturers who cannot operate without losses under their ceiling prices. Many manufacturers are, however, not covered by CPR 22 and will not, therefore, have available to them the adjustment provision in that regulation. This general overriding regulation was issued to make individual adjustments available to any manufacturer who finds himself in a loss position as a result of a ceiling price imposed by any regulation.

The provisions of this regulation will apply to all manufacturers whether covered by CPR 22 or by any other ceiling price regulation, but a manufacturer will not be prevented thereby from taking advantage of any special adjustment provisions of any other regulation which may be applicable to him.

Like CPR 22, this regulation is intended to provide for individual adjustments, under certain circumstances, for a manufacturer who cannot operate under ceiling price regulations without a loss on his over-all operations. As under CPR 22, the manufacturer must show that his loss is due or will be due to ceiling price limitations. It is not intended to provide adjustments for losses resulting from factors other than ceiling prices, such as seasonal, temporary, or nonrecurring factors, uneconomical operations, illegal wage payments, and the like; nor is it intended to provide an inefficient manufacturer with a level of prices substantially in excess of that which is adequate for the bulk of his competitors.

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GOR 10 AMENDMENT 1 PROVIDES ADJUSTMENT FOR LOSSES AT SEPARATE PLANT OR FACTORY: Manufacturers who are experiencing losses in the operation of separate plants or factories may appeal to the Office of Price Stabilization for upward adjustments of their ceiling prices under the provisions of Amendment 1 to General Overriding Regulation 10, effective June 7, 1951.

Prior to issuance of the amendment, manufacturers could apply for relief under GOR 10 only if they experienced over-all losses because of ceiling price regulations.

This amendment also revises the definition of manufacturer so as to make it clear that the regulation applies to any seller who is engaged in business other than as a wholesaler or retailer. This definition is the same as the definition of manufacturer in the General Ceiling Price Regulation.

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GOR 10 EXTENDED TO INCLUDE TERRITORIES AND POSSESSIONS: Amendment 2 to General Overriding Regulation (GOR) 10 issued by the Office of Price Stabilization and effective on June 13, 1951, extends to the manufacturer in the territories and possessions of the United States the same permission to request an upward adjustment of ceiling prices in the event he is being forced to operate his business at a loss, as has already been granted manufacturers in the 48 states and the District of Columbia.

Although Amendment 1 to GOR 10 made it possible to ask for an adjustment of ceiling prices in the event of a loss due to the price ceilings, manufacturers in the territories and possessions of the United States were not included.

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NO CEILING PRICES FOR FRESH ALASKA SALMON SOLD TO CANNERIES: Ceiling prices for fresh Alaska salmon sold to canneries will not be established at present, the Office of Price Stabilization announced on May 9.

The Agency explained that some contracts have already been completed between fishermen and canners fixing the amount which canners will pay fishermen for fresh salmon, while other contracts are being negotiated.

In view of this situation and the fact the 1951 season has already opened, OPS feels that no useful purpose will be served by imposition of a ceiling price on fresh salmon at this time.

The Agency announced, however, that it will not permit further increases in canned salmon prices over those frozen in January under the General Ceiling Price Regulation.

As this year's catch progresses, OPS said it may undertake to lower canned salmon prices if anticipated production is forthcoming.

The Alaska salmon season opened May 1.

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PAPERBOARD SHALLOW CONTAINERS INDUSTRY REQUESTS TAILORED PRICE REGULATION: Members of the Paperboard Shallow Containers Industry Advisory Committee told OPS officials on May 28 that they desired a tailored price regulation for their industry drawn up on the lines of OPA's MPR 359, which spelled out dollars and cents prices.

The committeemen at their first meeting suggested cost increases in the industry could be determined by cost studies on certain key items.

Committeemen undertook to report materials used in these items which will be included in forms which OPS will prepare for the industry. On these forms cost data over seven quarters commencing July 1, 1949, will be reported to OPS.

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BUSINESS LICENSING AUTHORITY SOUGHT BY OPS EXPLAINED: A memorandum has been filed with the House and Senate Banking and Currency Committees by the Office of Price Stabilization setting forth in detail the reasons why the agency is seeking licensing authority, a June 8 OPS news release states.

This memorandum makes it clear that every business firm would have "an absolute right to a license," that it would not give OPS the authority to prevent persons from going into business, and that only the courts would have the power to suspend a license.

The proposal to grant the OPS licensing authority is contained in a pending amendment to legislation extending the Defense Production Act of 1950, on which hearings are currently being held.

"This amendment, which is offered as a general enforcement device for price control only, provides that a license must be given as an absolute right to anyone engaged or desiring to engage in business," the memorandum points out.

"No license can be required under the amendment of (a) farmers and fishermen, or (b) newspapers, radio and television stations."

The OPS memorandum points out that the agency is not seeking an unprecedented power, but that more than 20 Federal statutes having no relationship to wartime emergencies contain licensing provisions as a necessary aid in securing compliance, and that the amendment follows almost word for word provisions contained in the Emergency Price Control Act of 1942.

Stressing the need for flexibility in enforcement provisions, the memorandum states: "The proposed licensing system provides a method whereby there can be taken into account in connection with each violation the degree of wilfulness involved, the seriousness of the violation, the nature of the violator's business, and the importance of his business to the community as a whole."

The memorandum concludes by pointing out that the licensing system is not designed to punish the initial violator, but to "restrain the persistent violator." The mere existence of this authority, it contends, would prove a major deterrent to violations, especially in the case of "a small group of wilful businessmen who regard financial penalties as merely 'taxes' to be paid for a continuing unlawful profit."

From the inception of price control in 1942 through March 31, 1945, there were 32,118 license warnings issued, but as of May 1, 1945, only 325 license suspension suits had been filed in court; out of 116 suits completed on that date, 101 resulted in orders of suspension varying from two days to one year.

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POSTED PRICES ON CONTROLLED ITEMS: An important development in price control of consumer items, intended to benefit the consumer and the business community, and to make enforcement of regulations easier, is now under way throughout the nation, OPS announced on May 31.

This concerns requirements for public posting or item marking of legal ceiling prices, or of selling prices asserted to be at or below ceilings, enabling customers to tell at a glance just what price can be charged legally by the retailer. Such public posting will also, Office of Price Stabilization officials pointed out, simplify the task of enforcement since the publicly displayed prices can easily be checked against records to prove that they conform, and OPS can be certain that items are not being sold at a higher level as long as customers know what the legal ceiling is.

These posted prices take several forms. Where it has been possible to establish specific dollars and cents ceiling for items, identical for all sellers of the same class in a region, the posting can be in the form of a printed placard listing them. When, however, prices must vary from store to store and are established on a cost markup basis, which may change from time to time, they are displayed by the businessman himself, either ticketed on at or near the items to be sold or, as in the case of the service regulation, posted in a placard prepared by the operator.

Several retail categories are already operating with publicly displayed prices under regulations pertaining to them and others are required to begin doing so in the near future.

By the beginning of summer, posted or ticketed prices will be displayed for commodities and services representing a major portion of the individual's consumer good expenditures.

Beginning on April 30, and continuing each succeeding Monday, food stores are obliged to mark their selling prices on or near all items covered by CPR 15 and 16 (butter, packaged cheese, baby food, cocoa, breakfast cereals, coffee and tea, flour mixes, canned and frozen fruits and vegetables, jams and jellies, lard, mayonnaise and salad dressing, shortenings, canned meats and canned fish, etc.) Such displayed selling prices must always be at or below ceiling prices. By each Monday henceforth, the grocer must re-figure and put into effect a new ceiling price on any item whose net cost is different from the net cost on which his existing ceiling was based.

It is planned that dollars and cents prices will be ordered posted for retail grocery items in communities throughout the country as soon as possible after costs of raw products now below parity can be stabilized.

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TIMETABLE FOR COMPLIANCE WITH OPS REGULATIONS: Recently a timetable for compliance with regulations of the Office of Price Stabilization was issued. The following affect the fishery and allied industries:

JULY 2 - MANUFACTURERS - CPR 22 - CEILING PRICES UNDER GENERAL MANUFACTURERS REGULATION GO INTO EFFECT. LAST DATE FOR FILING FORM B REPORTS WITH OPS, WASHINGTON.

JULY 15 - IMPORTER-RETAILERS - CPR 31 - EFFECTIVE DATE FOR DETERMINING AND FILING PRICING DATA ON IMPORTS. SELLERS WHO FILED UNDER ORIGINAL MAY 9 DATE SHOULD START PRICING AS OF TIME OF FILING.

WAGE STABILIZATION BOARD

BASE-PERIOD ABNORMALITY CASES RESOLUTION ON WAGES: The Wage Stabilization Board announced May 25 that wage increases made after January 15, 1950, to comply with the 1949 amendments of the Fair Labor Standards Act may be incorporated into a company's base period pay level for the purpose of computing allowable increases under General Wage Regulation 6.

Employers desiring to incorporate the Fair Labor Standards Act increases into their base period pay level must obtain advance approval of the Board before making such a change.

The Board adopted a resolution concerning the Fair Labor Standards Act adjustments and also setting forth other policies for operating under Section 4 of Regulation 6. This section deals with base pay period abnormalities.

Employers desiring to apply the new policies under Section 4 of Regulation 6 must obtain prior Board approval. Petitions for such approval should be submitted on Form WS-6(b) to the nearest Wage-Hour Division field office for transmission to the WSB.

The resolution deals with seasonal establishments not in substantial operation on January 15, 1950; plants established between January 15, 1950, and January 26, 1951; establishments in which job classifications are substantially different because of conversion or other reasons; establishments which have experienced wide swings in employment since January 15, 1950, and the Fair Labor Standards Act adjustments.

Heretofore, employers in seasonal industries have been permitted to select as a base pay period the first payroll period following January 15, 1950, when the employee unit involved reached 75 percent of its normal size, provided that the wage rates paid in such period were not greater than the wage rates in effect at the conclusion of the 1949 season; or if the rates were greater, the last period in 1949 when the employee unit was no less than 75 percent of its normal size.

By Section 1(a) of the Resolution, permission to use such base pay period without Board approval is withdrawn, effective on June 25, 1951, and thereafter seasonal establishments will be required to secure Board approval for the selection of a base pay period.



Department of the Interior

DEFENSE FISHERIES ADMINISTRATION

EAST AND GULF COAST FISH CANNERS MEET WITH DEFENSE OFFICIALS: Ways and means of solving shortages of manpower and materials now facing the cannery industry were discussed at a meeting in Washington on May 7 when industry representatives met with officials of the Defense Fisheries Administration and other defense agencies.

This was the second in a series of Government-fishing industry meetings. These fish cannery firms from the areas in question constitute the industry Advisory Committee

for East Coast and Gulf Canned Fish named recently by the Defense Fisheries Administration of the Department of the Interior, the Office of Price Stabilization, and the Department of Agriculture. The meeting was held in the Department of the Interior building under the joint auspices of the three agencies.

At the conclusion of the opening remarks made by Albert M. Day, Administrator of the Defense Fisheries Administration, Maurice Rattray, Deputy Administrator, took over the discussion of production problems at the morning session which was devoted primarily to the canning of Maine sardines. An estimated pack of 2½ million cases of Maine sardines was predicted for the 1951 season. The record pack of 3.8 million cases of this food product was achieved in 1950. How the fishing industry might fare under the Controlled Materials Plan, if adopted, was also explained by DFA officials.

The same group, in the afternoon, discussed price control difficulties with Alger Pike, Chief, Fish Section, OPS, presiding.

The majority of the members in attendance at the meeting arranged to stay over in Washington to attend the joint defense council called by Secretary of the Interior Oscar L. Chapman for May 9. Interior Department defense agencies and advisory committees heard vital aspects of the national emergency production job discussed by President Truman, Defense Mobilization Administrator Charles E. Wilson, and National Production Authority Administrator Manly Fleischmann.

* * * * *

INTER-AGENCY COMMITTEE ESTABLISHED TO STUDY FISHERY INDUSTRY: Pursuant to a request from the Economic Stabilization Agency, Maurice Rattray, Deputy Administrator of the Defense Fisheries Administration, has been designated to serve on an inter-agency committee to study the fishery industry of the United States and recommend to Eric Johnston procedures under which various parts of the industry can best be brought under the appropriate provisions of the stabilization program.

Johnston's memorandum of designation requested that first attention be given to problems of the Alaska salmon fishing industry. Members are also being designated to serve on this committee from the Wage Stabilization Board and the Office of Price Stabilization.

FISH AND WILDLIFE SERVICE

ALASKA COMMERCIAL FISHING SEASONS AUTHORITY REDELEGATED: Authority to shorten, lengthen, or reopen for limited periods any closed fishing period in Alaska has been redelegated to the Regional Director, Assistant Regional Director, and Fishery Management Supervisor of Region 6, according to an order issued by Albert M. Day, Director of the U. S. Fish and Wildlife Service, on May 4, 1951. The full text of the order follows:

DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

REGIONAL DIRECTOR, ASSISTANT REGIONAL
DIRECTOR, AND FISHERY MANAGEMENT
SUPERVISOR OF REGION 6

REDELEGATION OF AUTHORITY TO ADJUST
ALASKA COMMERCIAL FISHING SEASONS

MAY 4, 1951.

Pursuant to § 102.3a of the regulations for the protection of the commercial fisheries of Alaska, as published in the FEDERAL REGISTER March 8, 1951 (16 CFR 2154) and for the purpose of implementing said section, there is hereby redelegated to the Regional Director, Assistant Regional Director, and Fishery Management Supervisor of Region 6, authority

to shorten, lengthen, or reopen for limited periods any closed fishing period. Any such extension or curtailment of fishing shall be based on a finding of fact as to the abundance of fish warranting such action.

(44 Stat. 752; 48 U. S. C. 221-224)

ALBERT M. DAY,
Director.

* * * * *

INTERIOR FILM EXPERT TO REPRESENT U. S. AT EUROPEAN FILM FESTIVAL: The selection by the Department of State of Elliot A. Macklow, motion picture expert of the Fish and Wildlife Service, to serve as the official United States delegate to the Fifth International Edinburgh Film Festival to be held in Scotland from August 19 to September 9, was announced today by Service Director Albert M. Day.

Macklow, who is in charge of the motion picture program of the Service's Branch of Commercial Fisheries, recently completed the production of the 16 mm. sound and color film, The Story of Menhaden, which was chosen by the Department of State for showing this year at the Edinburgh festival as well as at the 12th International Exhibition of Cinematographic Art which is to be held in Venice, Italy, from August 8 to 18.

As United States delegate he will sponsor the films selected to represent the United States Government for showings at the festival and will discuss with film producers, film critics, and educators of the countries represented new motion picture techniques for the purpose of improving the production of motion pictures of that type in this country.

In 1949 another film, It's the Maine Sardine, won first prize in the public relations category at the 10th International Exhibition in Venice.

By appointment of the Secretary of the Interior, Macklow has served as Interior's representative on the Department of State's Audio-Visual Aid Review Committee since 1948.

NOTE: ALSO SEE P. 44 OF THIS ISSUE.



Interstate Commerce Commission

DECISION ON EXPRESS CHARGES FOR REICING SEAFOODS: Division 2 of the Interstate Commerce Commission has issued a report and order, dated June 19, in docket I. and S. No. 5804--Reicing Seafoods and Other Perishables--Express. Schedules filed by the Railway Express Agency, Inc., proposing to establish certain rules and charges to govern its practice of reicing perishable less-than-carload traffic or of handling that traffic in iced refrigerator cars were found by Division 2 of ICC to be unjust and unreasonable. However, the report expressed certain views indicating what type of schedules covering Charges for Reicing Seafoods could be considered just and reasonable.

The order directed the Railway Express Agency to cancel the previously filed schedules on or before July 26, on one day's notice, and discontinued the proceeding, without prejudice to the filing of new schedules in conformity with views expressed in the report.



Department of Labor

CRITICAL OCCUPATIONS LIST REVISED: The Labor Department's revised list of critical occupations was announced May 7 by the Secretary of Labor. The new list of critical occupations was prepared for use in connection with the revised list of essential activities released April 8 by the Secretary of Commerce (see p. 78 of this issue). The Labor Department's revised list is based on newly established criteria

relating to plans for partial mobilization. It replaces the list issued August 3, 1950.

The new list of critical occupations, covering 58 job titles and certain related occupations, will be used by the Department of Defense in considering requests for delay in call to active duty of reservists and members of the National Guard. The Selective Service System is making the list available to all local draft boards to assist them in making determinations on requests for occupational deferments.

The following are some of the occupational titles included in the list of critical occupations which may be of interest to the fishing and allied industries:

CHEMIST
ENGINEERS, MARINE, CHIEFS AND ASSISTANTS (DOES NOT INCLUDE THOSE
ABOARD FISHING VESSELS)
ENGINEER, PROFESSIONAL (ALL BRANCHES, INCLUDING MARINE ARCHITECT)
FOREMAN (CRITICAL OCCUPATIONS ONLY)
LAY-OUT MAN, MARINE
LOFTSMAN
MACHINIST (INCLUDES MARINE MACHINIST)
SHIP RIGGER
SHIPFITTER
SHIPMASTER, SHIP PILOT, AND MATES (THIS TITLE INCLUDES ONLY MASTER
O-88.02; SHIP PILOT O-88.31; MATE, FIRST O-88.03; MATE, SECOND
O-88.03; AND MATE, THIRD O-88.03; BUT DOES NOT INCLUDE PORT CAPTAIN;
TUGBOAT CAPTAIN; MATE, FISHING VESSEL; TUGBOAT MATE; DREDGE MATE;
DREDGE CAPTAIN; AND FERRYBOAT CAPTAIN).

It is the intention of the Department of Labor that men in critical occupations and employed in essential activities should be considered for deferment, but it does not necessarily follow that all persons engaged in these occupations will be given automatic deferment. Each request for deferment is considered individually by the Department of Defense in cases involving reservists or by Selective Service boards in cases of draft registrants.

In announcing the revised list of critical occupations, the Secretary of Labor said each occupation included had been determined on the basis of the following criteria:

- (A) UNDER THE FORESEEABLE MOBILIZATION PROGRAM AN OVER-ALL SHORTAGE OF WORKERS IN THE OCCUPATION EXISTS OR IS DEVELOPING WHICH WILL SIGNIFICANTLY INTERFERE WITH EFFECTIVE FUNCTIONING OF ESSENTIAL INDUSTRIES AND ACTIVITIES.
- (B) A MINIMUM ACCELERATED TRAINING TIME OF 2 YEARS (OR THE EQUIVALENT IN WORK EXPERIENCE) IS NECESSARY TO THE SATISFACTORY PERFORMANCE OF ALL THE MAJOR TASKS FOUND IN THE OCCUPATION.
- (C) THE OCCUPATION IS INDISPENSABLE TO THE FUNCTIONING OF THE INDUSTRIES OR ACTIVITIES IN WHICH IT OCCURS.

The list of critical occupations is subject to change. Revisions will be made from time to time in order that the list will be continually consistent with foreseeable plans for mobilization.

Job definitions found in the Dictionary of Occupational Titles (1949 Edition) published by the United States Employment Service, have served as the basis for most of the definitions of occupations now on the critical list.

NOTE: SEE COMMERCIAL FISHERIES REVIEW, SEPTEMBER 1950, PP. 59-62.



Department of State

PROCLAMATION OF RESULTS OF TORQUAY TARIFF NEGOTIATIONS: The President signed on June 2, 1951, a proclamation to give effect to the tariff negotiations undertaken by the United States at Torquay, England, from September 1950 to April 1951. The results of these negotiations were made public on May 9, 1951.^{1/}

Pursuant to procedure provided for in the proclamation, the President also signed on June 2 a letter to the Secretary of the Treasury identifying concessions in Schedule XX (United States) to the Torquay Protocol, which will become effective on June 6, 1951. These are for the most part the concessions negotiated with the Benelux Customs Union, Canada, France, and the Dominican Republic, all of which countries have undertaken to give effect to their concessions to us on June 6. Further letters will be issued giving effect to other concessions as and when other countries with which we negotiated such concessions undertake to give effect to the concessions they granted to the United States.

The proclamation and the letter indicate certain resultant adjustments in the list of Cuban products entitled to preferential treatment pursuant to the exclusive agreement of October 30, 1947, between the United States and Cuba. It announces that, on account of the provision in the Philippine Trade Act of 1946 preventing the conclusion of a trade agreement with the Philippines at this time, the United States has invoked Article XXXV of the General Agreement on Tariffs and Trade to prevent the application of that agreement between the United States and the Philippines, which it is expected will accede to the agreement as a result of negotiations at Torquay.

^{1/}SEE COMMERCIAL FISHERIES REVIEW, MAY 1951, PP. 10-20.

* * * * *

SOME TORQUAY TARIFF CONCESSIONS PUT INTO EFFECT: United States tariff concessions initially negotiated at Torquay, England, with the Benelux Customs Union (Belgium, the Netherlands, and Luxembourg), Canada, France, and the Dominican Republic will, under the provisions of the Torquay Protocol to the General Agreement on Tariffs and Trade, be put into effect on June 6, 1951. All these countries except Canada joined the United States in signing the protocol on April 21, the opening date for signature of the document, the Department of State announced in May. Canada signed at New York on May 7.

Concessions granted by the United States to the eleven other countries with which we negotiated at Torquay will, in practically all cases, be withheld until the thirtieth day after each of these countries signs the protocol. A few United States concessions negotiated initially with those 11 countries will, however, be put into effect on June 6, for technical and other reasons, but no fishery items are included in this action.

As soon as possible, and before the effective date, the President is expected to issue a proclamation for the purpose of making effective the new United States tariff rates which will go into effect on June 6.

On June 6, also, the countries other than the United States which have already signed the Torquay Protocol will be required by that document to put into effect any concessions they made to the United States, as well as those which they made to each other. They may also put into effect concessions which they had granted to other countries.

The countries with which the United States initially negotiated concessions at Torquay are indicated in the Analysis of Torquay Protocol Schedules, and Related Documents. (Fishery items and country negotiated with are listed in the May 1951 issue of Commercial Fisheries Review, starting on page 18.)

* * * * *

SWEDEN AND CZECHOSLOVAKIA SIGN TORQUAY PROTOCOL TO GATT: The United States Government has been notified by the headquarters of the United Nations that Sweden, on June 7, 1951, signed the Torquay Protocol to the General Agreement on Tariffs and Trade, at New York. Czechoslovakia signed the protocol on June 8.

The protocol provides that the United States and Sweden shall put into effect on July 7, the tariff concessions negotiated between the two countries at the recent conference at Torquay, England. These concessions are in addition to those exchanged between the two countries at Annecy, France, in 1949.

Since the United States and Czechoslovakia did not negotiate any new concessions at Torquay, no changes in United States tariff rates will result from Czechoslovakia's signature of the protocol.

NOTE: SEE COMMERCIAL FISHERIES REVIEW, MAY (1951), PP. 10-20.



Eighty-Second Congress (First Session)

MAY 1951

Listed below are public bills and resolutions introduced and referred to committees, or passed by the Eighty-Second Congress (First Session) and signed by the President, that affect in any way the fisheries and allied industries. Public bills and resolutions are shown in this section only when introduced and if passed when they are signed by the President. The more pertinent reports, hearings, or chamber actions on some of the bills shown in this section from month to month are also listed.

BILLS AND RESOLUTIONS INTRODUCED:

Fats and Oils Import Controls: H. R. 4297 (Andresen) - A bill to continue for a temporary period certain powers, authority, and discretion for the purpose of exercising, administering, and enforcing import controls with respect to fats and oils (including butter), and rice and rice products; to the Committee on Banking and Currency.

Food, Drug, and Cosmetic Act Amendment: H. R. 4242 (Priest) - A bill to amend section 801 (d) of the Federal Food, Drug, and Cosmetic Act, as amended, in relation to exports; to the Committee on Interstate and Foreign Commerce.

Licensing of Exporters: H. R. 4267 (Combs) - A bill to amend the Federal Food, Drug, and Cosmetic Act, so as to provide for the licensing of exporters of food, drugs, devices, and cosmetics, and to prescribe standards applicable to such articles when exported; to the Committee on Interstate and Foreign Commerce.

Lobster Definition: S. 1514 (Brewster and Mrs. Smith of Maine) - A bill to fix a reasonable definition and standard of identity of lobsters; to the Committee on Interstate and Foreign Commerce. (According to this bill and for the purposes of the Federal Food, Drug, and Cosmetic Act, the word "lobster" shall mean, "and be included in the common and usual name of, only that species of decapod crustaceans of the genus *Homarus* known as *Homarus americanus* and found in the Atlantic waters contiguous to the North American coast line from the vicinity of Henly Harbor, Labrador, on the north, to the vicinity of Cape Hatteras, North Carolina, on the south. This species is distinguished from others in having twenty pairs of gills, and in having its first three pairs of legs terminating in chelae, or pincers, the first pair of which are large and massive. The word "lobster" shall not be included in the common and usual name of (1) such similar species of Homaridae as the *Nephrops norvegicus*, commonly found in the waters of Norway, and the *Homarus gammarus*, common to the waters of Europe; (2) members of the family Palinuridae, including the representative genera *Panul-*

lirus, Jasus, and Palimurus which have sometimes been called by such terms as rock lobster, spiny lobster, sea-crawfish, red lobster, thorny lobster, langouste, crayfish, Sydney crayfish and Kreef; (3) members of the Scyllaridae family, sometimes referred to as the Spanish lobster or bear crab; or (4) the fresh water crayfish, or crawfish of the Austrostracidae, Parastacidae, and Estacidae families."

Also: H. R. 4174 (Fellows)...
H. R. 4175 (Hale)...
H. R. 4177 (Nelson)...

Mollusks Entry Prevented: S. 1489 (McFarland) - A bill to establish and prescribe regulations governing the entry of infested mollusks into the United States; to the Committee on Agriculture and Forestry.

Shrimp Import Duty: H. R. 4064 (Willis) - A bill to provide for an ad valorem duty on the importation of shrimp; to the Committee on Ways and Means

Tidelands Jurisdiction: H. R. 4147 (Teague) - A bill to confirm and establish the titles of the States to lands and resources in and beneath navigable waters within State boundaries and to provide for the use and control of said lands and resources; to the Committee on the Judiciary.

Also: H. R. 4196 (Burlison)...
H. R. 3936 (Hillings)...

Water Pollution Prevention: S. 1472 (Kefauver) - A bill to encourage the prevention of water pollution by allowing amounts paid for industrial waste treatment works to be amortized at an accelerated rate for income-tax purposes; to the Committee on Finance.

BILLS PASSED - SENATE:

Trade Agreements: By 72 yeas to 2 nays, Senate passed with amendments H. R. 1612, to extend for 2 years the authority of the President under section 350 of the Tariff Act of 1930 to enter into foreign trade agreements, after taking the following action on certain floor amendments among which were included: Case amendment requiring prompt investigation by U. S. Tariff Commission as to whether any particular concession threatens serious injury to domestic industry; and Langer amendment requiring report by Tariff Commission within 1 year after application for any concession that threatens serious injury to domestic industry. Senate asked for a conference and appointed conferees.

CHAMBER ACTIONS - SENATE:

Alaska Statehood: S. 50, statehood for Alaska, was reported with amendments (S. Rept. 315).

Hawaii Statehood: S. 49, statehood for Hawaii, was reported with amendments (S. Rept. 314).

Trade Agreements: Conference report on H. R. 1612, to extend for 2 years the authority of the President under section 350 of the Tariff Act of 1930 to enter into foreign trade agreements was adopted.

CHAMBER ACTIONS - HOUSE:

Fish and Wildlife Service Appropriations Cut: The House passed by voice vote, H. R. 3790, the Department of the Interior appropriation bill for 1952. Among several amendments adopted prior to its passage, the following two are of particular interest: (1) cuts \$171,000 from the Fish and Wildlife Service funds for investigations of fish and wildlife resources; (2) permits the filling on only 25 percent of the vacancies that occur in the Department of the Interior in 1952, with certain exceptions.

Trade Agreements: Disagreed to Senate amendments to H. R. 1612, to extend the authority of the President under section 350 of the Tariff Act of 1930 to enter into foreign trade agreements; agreed to a conference requested by the Senate; and appointed conferees.

CONGRESSIONAL HEARINGS:

Tidelands Jurisdiction: Committee on Interior and Insular Affairs: On May 15 by vote of 7 to 4, the committee agreed to proceed upon the principle of the proposed amendments by Senator Long which would place supervision of operation of submerged lands in the hands of State authorities with certain cooperation by the Secretary of the Interior; the amendments would have effect of giving to coastal States supervision of the Continental Shelf beyond the seaward boundaries of States. The committee then directed Senators Long and Cordon to revise the proposed amendments in the nature of a substitute for S. J. Res. 20 and present a clean bill to the committee for its consideration.

Interior Appropriations: Committee on Appropriations: Subcommittee on Interior Appropriations began hearings on H. R. 3790, Interior Department appropriations for 1952 (Fish and Wildlife Service appropriations are included in this bill).

Trade Agreements: Conferees reached agreement to file a conference report on the differences between the House- and Senate-passed versions of H. R. 1612, to extend for 2 years the authority of the President under section 350 of the Tariff Act of 1930 to enter into foreign trade agreements. As agreed upon the House conferees receded from and concurred in all of the Senate amendments except on two points, including the following: conferees agreed to a slight modification in the so-called escape-clause amendment to provide for use or application of the clause whenever there is an actual increase in imports or an increase relative to domestic production.

CONGRESSIONAL REPORTS:

Committee reports on bills reported in this section of interest to the fishery and allied industries (available only from the committee submitting the report):

Federal Wildlife Conservation Activities, 1950, Senate Report No. 317 (May 9, 1951, 82nd Congress, 1st Session), 241 p., printed. This is a report of the Subcommittee to Investigate Wildlife Conservation submitted by the Committee on Expenditures in the Executive Department. Among the reports of the various agencies connected with wildlife conservation activities is that of the U. S. Fish and Wildlife Service. The activities of the Service's Branch of Commercial Fisheries are summarized in this report, as well as those of the Branch of Fishery Biology, the Branch of

Alaska Fisheries, the Office of Foreign Activities, and others.

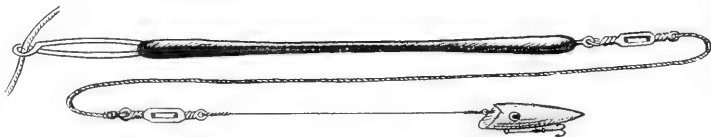
Providing for the Admission of Alaska into the Union, Senate Report No. 315, (May 8, 1951, 82nd Congress, 1st Session), 54 p., printed, pursuant to S. 50 (82nd Congress, 1st Session), to provide for the admission of Alaska into the Union. Committee recommended passage of the bill as amended. Minority views are included in this report.

Statehood for Hawaii, Senate Report No. 314, (May 8, 1951, 82nd Congress, 1st Session), 69 p., printed, pursuant to S. 49 (82nd Congress, 1st Session), to enable the people of Hawaii to form a constitution and State government and to be admitted into the Union on an equal footing with the original States. Committee recommended passage of the bill as amended. Minority views are included in this report.



COMMERCIAL SALMON TROLLING

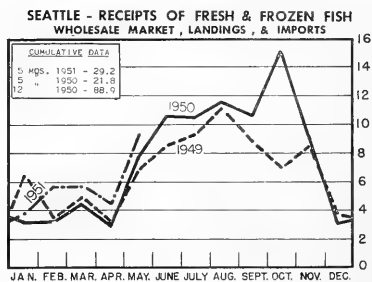
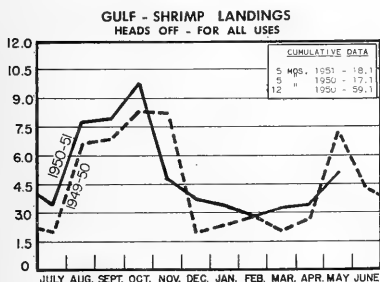
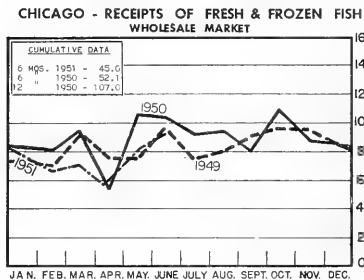
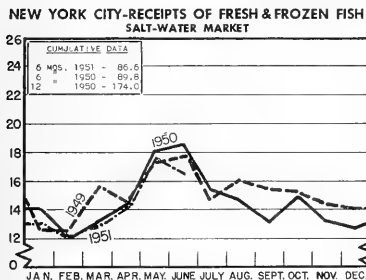
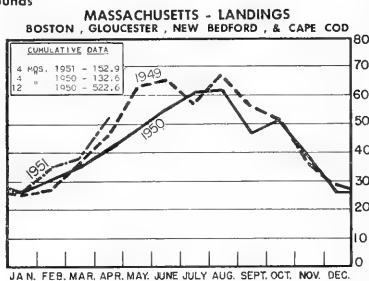
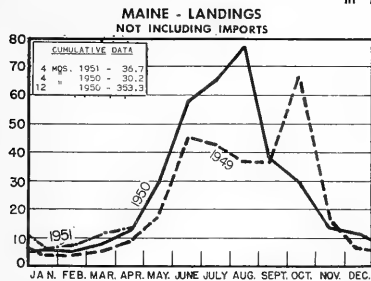
In the fifty years following the discovery that king or chinook, and silver or coho salmon would strike a moving lure or bait, the troll fishery has developed into one of the most extensive fisheries on the Pacific Coast. It now extends from central California to southeastern Alaska, and during recent years has involved as many as 3,400 United States trolling craft. Probably the most important reasons for this phenomenal growth are the sporting nature of the fishery, the relatively independent life lead by the troll fishermen, the fact that effective operations can be conducted either by an individual or, at most, a crew of two, and the fairly dependable financial return from the comparatively small investment required to outfit and operate a boat.



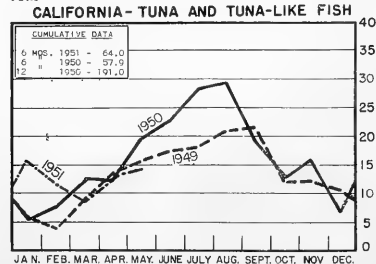
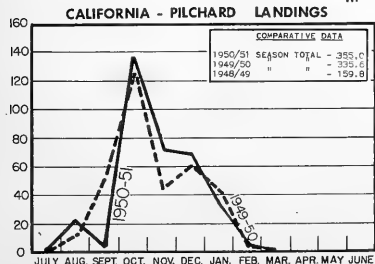
Troll fishing essentially involves the use of a moving lure or baited hook at a desired depth in the water. Commercial trolling craft vary considerably in size and design, but the usual length is from 30 to 60 feet. Whereas the earlier craft were generally of a double-end design, i.e., both the bow and stern pointed, the recent trend has been toward the horseshoe-type stern. Irrespective of size and design, however, a trolling craft can always be identified by the long upright poles which are used to keep the lines clear of the boat.

LANDINGS AND RECEIPTS

In Millions of Pounds



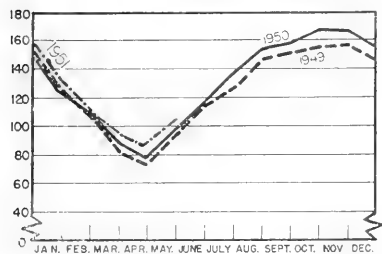
In Thousands of Tons



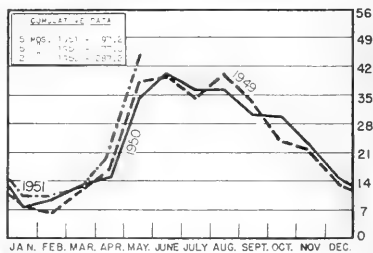
COLD STORAGE HOLDINGS and FREEZINGS of FISHERY PRODUCTS

In Millions of Pounds

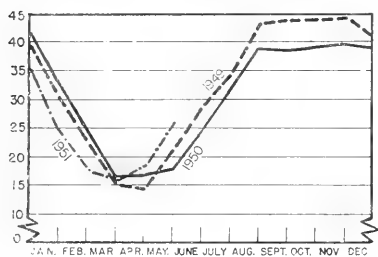
U.S. & ALASKA - HOLDINGS OF FROZEN FISH



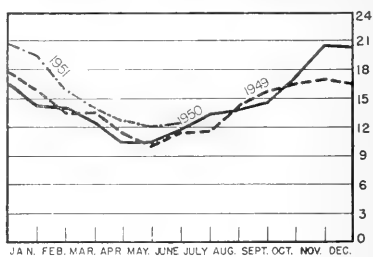
U.S. & ALASKA - FREEZINGS



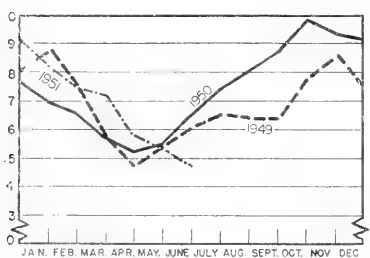
NEW ENGLAND - HOLDINGS OF FROZEN FISH



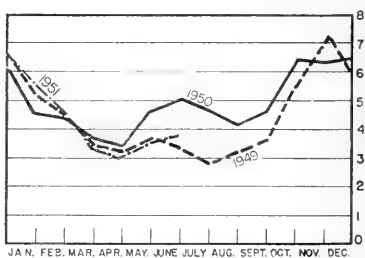
NEW YORK CITY - HOLDINGS OF FROZEN FISH



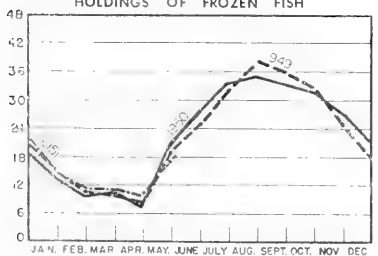
CHICAGO - HOLDINGS OF FROZEN FISH



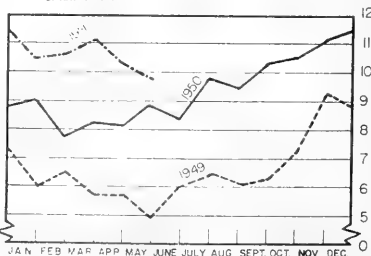
GULF - HOLDINGS OF FROZEN FISH



WASHINGTON, OREGON, AND ALASKA - HOLDINGS OF FROZEN FISH

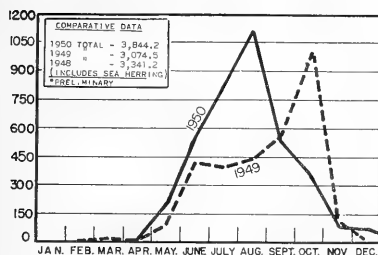


CALIFORNIA - HOLDINGS OF FROZEN FISH

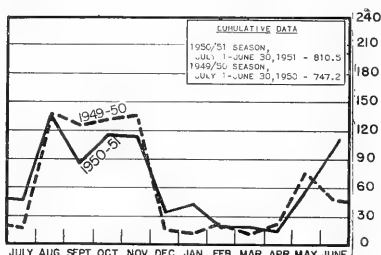


CANNED FISHERY PRODUCTS

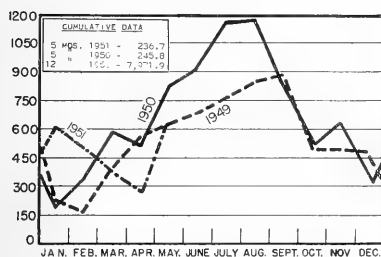
MAINE - SARDINES, ESTIMATED PACK



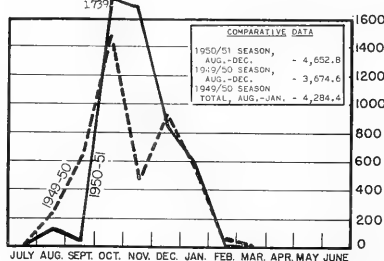
UNITED STATES - SHRIMP



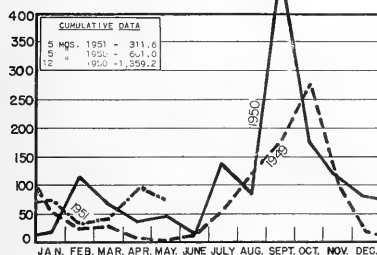
CALIFORNIA - TUNA AND TUNA-LIKE FISH



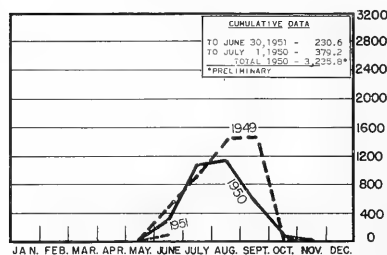
CALIFORNIA - PILCHARDS



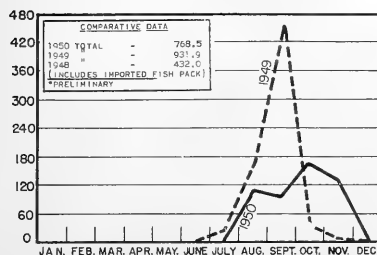
CALIFORNIA - MACKEREL



ALASKA - SALMON



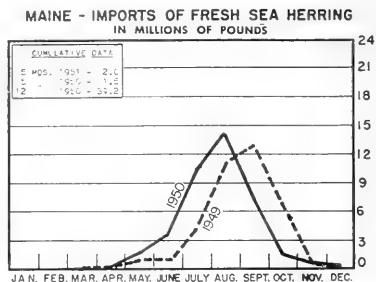
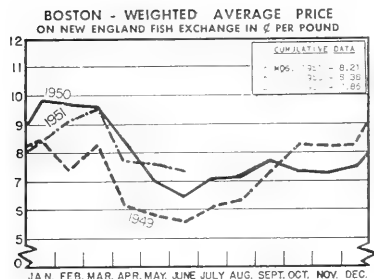
WASHINGTON - PUGET SOUND SALMON



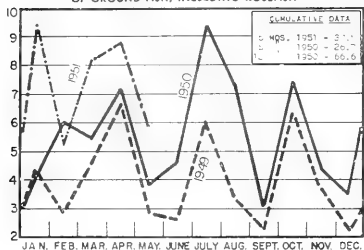
STANDARD CASES

Variety	No. Cans	Can Designation	Net. Wgt.
SARDINES	100	1/4 drawn	3 1/4 oz.
SHRIMP	48	—	5 oz.
TUNA	48	No. 1/2 tuna	7 oz.
PILCHARDS	48	No. 1 oval	15 oz.
MACKEREL	48	No. 300	15 oz.
SALMON	48	1-pound tall	16 oz.

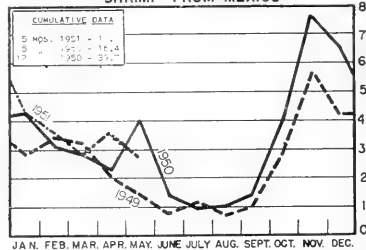
PRICES, IMPORTS and BY-PRODUCTS



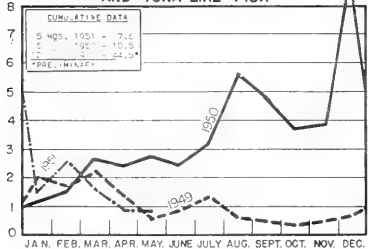
In Millions of Pounds
**U.S. - IMPORTS OF FRESH & FROZEN FILLETS
OF GROUND FISH, INCLUDING ROSEFISH**



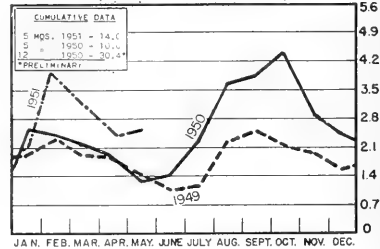
**U.S. - IMPORTS OF FRESH AND FROZEN
SHRIMP FROM MEXICO**



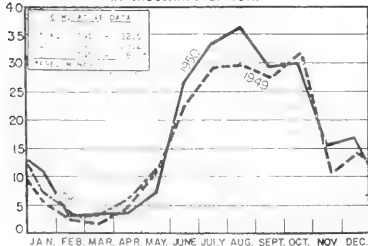
In Millions of Pounds
**U.S. - IMPORTS OF CANNED TUNA
AND TUNA-LIKE FISH**



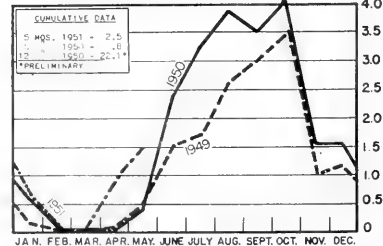
**U.S. - IMPORTS OF CANNED SARDINES
(Include in oil and not in oil)**

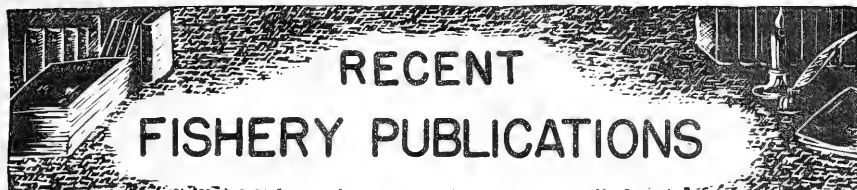


**U.S. & ALASKA - PRODUCTION OF FISH MEAL
IN THOUSANDS OF TONS**



**U.S. & ALASKA - PRODUCTION OF FISH OIL
IN MILLIONS OF GALLONS**





RECENT FISHERY PUBLICATIONS

Recent publications of interest to the commercial fishing industry are listed below.

FISH AND WILDLIFE SERVICE PUBLICATIONS

THESE PROCESSED PUBLICATIONS ARE AVAILABLE FREE FROM THE DIVISION OF INFORMATION, U. S. FISH AND WILDLIFE SERVICE, WASHINGTON 25, D. C. TYPES OF PUBLICATIONS ARE DESIGNATED AS FOLLOWS:

- CFS - CURRENT FISHERY STATISTICS OF THE UNITED STATES AND ALASKA.
- FL - FISHERY LEAFLETS.
- MDL - MARKET DEVELOPMENT SECTION LISTS OF DEALERS, LOCKER PLANTS, ASSOCIATIONS, ETC.
- SL - STATISTICAL SECTION LISTS OF DEALERS IN AND PRODUCERS OF FISHERY PRODUCTS AND BYPRODUCTS.
- SEP. - SEPARATES (REPRINTS) FROM COMMERCIAL FISHERIES REVIEW.

<u>Number</u>	<u>Title</u>
CFS-627	- Massachusetts Landings, January 1951, 12 p.
CFS-633	- Frozen Fish Report, April 1951, 10 p.
CFS-634	- Massachusetts Landings, February 1951, 14 p.
CFS-635	- Texas Landings, March 1951, 4 p.
CFS-637	- Fish Meal and Oil, March 1951, 2 p.
CFS-638	- Alabama Landings, March 1951, 4 p.
CFS-639	- Florida Landings, March 1951, 4 p.
CFS-640	- Alaska Fisheries, 1949 Annual Summary, 6 p.
FL-351	- Tuna Trolling in the Line Islands in the Late Spring of 1950, 32 p.
FL-391	- Technological Studies of the Starfish, 47 p.
FL-393	- Preliminary Review of the Fisheries of the U. S., 10 p.

Lists By States of Wholesale Dealers in Fishery Products (Revised):

SL-1	- Maine, 1951, 6 p.
SL-22	- Oregon, 1951, 4 p.
SL-26	- Illinois, 1950, 3 p.

Number Title Lists By States of Refrigerated Locker Plants (Revised):

MDL-19	- Washington, 15 p.
MDL-25	- Wisconsin, 16 p.
MDL-60	- Partial List of Inland Wholesale Dealers in Fishery Products, (Revised), 53 p.
Sep. 280	- Preliminary Report on 1950 North Pacific Albacore Tuna Explorations of the <u>John N. Cobb</u>
Sep. 281	- Tuna Production and Export Potentialities of Japan
Sep. 282	- Fishery Products as a Source of Animal Protein
Sep. 283	- Trade Agreements and the Fishery Industries

THE FOLLOWING SERVICE PUBLICATIONS ARE AVAILABLE ONLY FROM THE SPECIFIC OFFICE MENTIONED IN THE REVIEW.

Landings and Prices of Fishery Products, Boston Fish Pier, 1950, (Includes an Analysis of Boston Fishery Landings and Trends), by John J. O'Brien, 26 p., processed, May 1951. (Available free from the Market News Service,

U. S. Fish and Wildlife Service, 10 Commonwealth Pier, Boston 10, Mass.) A review of the fish marketing trends and conditions in Boston for 1950 is found in this publication. Detailed data on landings and weighted aver-

THE FOLLOWING SERVICE PUBLICATIONS ARE AVAILABLE ONLY FROM THE SPECIFIC OFFICE MENTIONED IN THE REVIEW.

age prices of fish and shellfish landed at the Boston Fish Pier during 1950 are given. Statistics are presented by months and by species, together with comparative data for previous years.

Production of Fishery Products in Virginia, Maryland, and North Carolina, 1950, (As Reported to Hampton Fishery Market News Office), by Chas. D. Stewart, 30 p., processed. (Available free from the Market News Service, U. S. Fish and Wildlife Service, P. O. Box 447, Hampton, Va.) In addition to a review and analysis of the trends in the production of

fishery products in certain areas of Virginia, Maryland, and North Carolina, this publication contains statistical data by months and species on the landings of fish and shellfish in selected areas in these States. The areas included are Morehead City, North Carolina; Hampton Roads, York River, Lower Northern Neck, and Eastern Shore, Virginia; and Ocean City, Cambridge, and Crisfield, Maryland. Comparative data for 1949 by areas and species are also included as well as a table showing the shrimp landings in certain North Carolina localities by areas and months.

THE FOLLOWING SERVICE PUBLICATION IS FOR SALE AND IS AVAILABLE ONLY FROM THE SUPERINTENDENT OF DOCUMENTS, WASHINGTON 25, D. C.

Otter Trawl Explorations in Philippine Waters, by Herbert E. Warfel and Porfirio R. Manacop, Research Report 25, 49 p., printed, 50 cents, 1950. A trawl fishery of considerable magnitude has developed in the Philippines since liberation from the Japanese in 1945. At the inception of the Philippine Fishery Program of the U. S. Fish and Wildlife Service, the trawl fishery was using a Japanese beam trawl (utase) and was, for the most part, confined to Manila Bay. Realizing that the supply of fish badly needed by the Philippine public

could be augmented by trawling, the program inaugurated exploratory fishing voyages to likely grounds and demonstrated the otter trawl in important fishing centers. Twenty-four areas were surveyed, and a number of drags sufficient to demonstrate the possibilities were made in each. The results are tabulated and described in this publication, along with the composition of the catch and catch by depth. A number of maps are included.

MISCELLANEOUS PUBLICATIONS

THESE PUBLICATIONS ARE NOT AVAILABLE FROM THE FISH AND WILDLIFE SERVICE, BUT USUALLY MAY BE OBTAINED FROM THE AGENCIES ISSUING THEM. CORRESPONDENCE REGARDING PUBLICATIONS THAT FOLLOW SHOULD BE ADDRESSED TO THE RESPECTIVE AGENCIES OR PUBLISHERS MENTIONED. DATA ON PRICES, IF READILY AVAILABLE, ARE SHOWN.

Advance Report on the Fisheries of New Brunswick, 1949, 12-1032, 11 p. (mostly statistical tables), processed, 25 cents. Fisheries Section, Industry and Merchandising Division, Dominion Bureau of Statistics, Ottawa, Canada, 1950. Reports on the sea and inland fisheries of New Brunswick for the year 1949. Included are data on the quantity and value of fish landed and marketed, and capital equipment and employees in the fisheries.

Dominion Bureau of Statistics, Ottawa, Canada, 1950. Reports on the fisheries of Nova Scotia for the year 1949. Data included are quantity and value of fish landed and marketed, and capital equipment and employees of the fisheries, together with comparative figures.

Advance Report on the Fisheries of Nova Scotia, 1949, 12-1022, 11 p. (mostly statistical tables), processed, 25 cents. Fisheries Section, Industry and Merchandising Division,

Advance Report on the Fisheries of Ontario, the Prairie Provinces, and the Northwest Territories, 1949, 12-102X, 16 p. (mostly statistical tables), processed, 25 cents. Fisheries Section, Industry and Merchandising Division, Dominion Bureau of Statistics, Ottawa, Canada, 1951. Reports on the fisheries of Ontario, Manitoba, Saskatchewan, Alberta, and the North-

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west Territories. Included are statistics for each Province, giving the production of fishery products, landed and marketed values, capital equipment of the fisheries, and the number of employees engaged in the fisheries.

Advance Report on the Fisheries of Quebec, 1949, 12-1024, 10 p. (mostly statistical tables), processed, 25 cents. Fisheries Section, Industry and Merchandising Division, Dominion Bureau of Statistics, Ottawa, Canada, 1950. The sea and inland fisheries of Quebec are reported upon in this publication. Included are data on the 1949 production of fish and shellfish, landed and marketed values, capital equipment of the fisheries, and the number of employees engaged in the fisheries.

Analysis of Torquay Protocol of Accession, Schedules, and Related Documents, Preliminary, (General Agreement on Tariffs and Trade Negotiated at Torquay, England, September 1950-April 1951), Publication 4209, Commercial policy Series 135, 474 p., processed, \$1.00. Department of State, Washington 25, D. C., May 1951. (For sale by Superintendent of Documents, Washington 25, D. C.) The countries with which the United States initially negotiated concessions at Torquay are indicated in this publication together with the concessions obtained and granted. In addition, there is a summary of benefits in terms of trade, and the instruments embodying the results of the Torquay tariff negotiations.

Annual Report of the Director, Fish and Wildlife Service, to the Secretary of the Interior, Fiscal Year Ended June 30, 1950, (Reprinted from the Annual Report of the Secretary of the Interior), 35 p., printed. The Service's activities are summarized in this report. Included are discussions on the following: Pacific Oceanic Fishery Investigations; utilizing the fishery resources (which includes the activities of the Branch of Commercial Fisheries); administration of the Alaska fisheries; research in fishery management (marine, coastal, and inland fisheries); maintaining the inland fisheries; international cooperation in conservation (international conservation agreements, international technical cooperation, and rehabilitation of Philippine fisheries); and administration of Federal statutes for protection of fish and wildlife life. The wildlife activities of the Fish and Wildlife Service are also covered.

"Biological Methods of Blood Removal and Their Effectiveness in Reducing Discoloration in Canned Dungeness Crabmeat," by Henry H. Elliott and Edward W. Harvey, article, Food Technology, April 1951, vol. 5, no. 4, pp. 163-6, illus.,

printed. Institute of Food Technologists, 119-123 West Park Ave., Champaign, Ill., single copies \$1.00. Describes the bleeding of crabs (especially the Dungeness crab, Cancer magister) for the purpose of improving the quality of the canned product. Experimental data and a discussion of results are given. The authors conclude that bleeding was found to be beneficial, and according to them: "Organoleptic tests revealed that bleeding improves the canned product in reducing the blue-gray discoloration, diminishing the general browning, improving flavor, and slightly improving texture. The drained liquid was reduced by approximately 20 percent in cans containing bled meat."

Black Discoloration in Shrimp, by C. P. Idyll, Special Service Bulletin No. 4, 3 p., processed. Marine Laboratory, University of Miami, Florida State Board of Conservation, Coral Gables, Florida, April 1951. This is a report on an investigation of the causes of black discoloration in shrimp, giving the shrimp a striped appearance in severe cases. Tests on shrimp reveal that bacteria and fungus spores are probably not the causes for the discoloration. The breakdown of shrimp blood when exposed to air may be the cause of the discoloration, according to the author. By carefully handling and storing the shrimp, a lower incidence of discoloration may be obtained. The black color does not appear to affect the quality of the shrimp as food, and consumers need have no hesitation in buying this type of discolored shrimp, the author concludes. Peeling the shrimp in preparation for cooking removes the black color, since it affects only the shell in almost all instances. Producers are advised by the author that, since the cause may be darkening of blood following exposure to the air, the most likely method of prevention is to head and thoroughly wash the shrimp in clean sea water as soon after catching as possible.

(California) The Commercial Fish Catch of California for the Years 1948-1949 (with Yield per Area of the California Sardine Fishing Grounds 1937-1949), Fish Bulletin No. 80, 87 p., printed, illus. Bureau of Marine Fisheries, Division of Fish and Game, San Francisco, Calif., 1951. Detailed records of California's commercial fish catch and related statistical information are presented in this bulletin. Included are tables giving the commercial fish landings and landed values for 1948 and 1949 by species and area; data on the number of commercial fishermen and vessels; the yield per area of the California sardine fishing grounds for 1937 through 1949; and a list of common and scientific names of fishes, crustaceans, and mollusks.

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"Canadian Fish Production in 1950," and "Canadian Fishery Exports in 1950," articles, Trade News, March 1951, vol. 3, no. 9, pp. 7-13, illus., processed. Department of Fisheries, Ottawa, Canada. The first article reviews the production of fishery products in Canada during 1950, with a short discussion of the data by fishery. The article states that "for lack of dollar currency many of the world's fish importers were obliged to reduce their purchases from Canada in 1950," and therefore Canada was more dependent on the United States Market. A summarization and analysis of Canada's fishery exports are presented in the second article.

(ECA) Eleventh Report to Congress of the Economic Cooperation Administration (For the Quarter Ended December 31, 1950), 170 p., illus., printed, 45 cents. Economic Cooperation Administration, Washington, D. C., May 1951. (For sale by Superintendent of Documents, Washington 25, D. C.) Reports on the activities under the economic Cooperation Act of 1948 as well as the programs of economic aid to Korea and the general area of China. Edible fishery products, and whale fish and fish oils are listed as a group in some of the tables. Included is an appendix summarizing the status of the United States Foreign Relief Program and the U. S. Foreign Aid Program.

Fishing Along the Coasts of Senegal, Cruise of the Trawler, "Gérard-Tréca" (La pêche au chalut sur les côtes du Sénégal, Campagne du chalutier Gérard-Tréca), April-Sept., 1949, by E. Postel, 39 p., plus plates, illus., printed in French. Gouvernement General de l'Afrique Occidentale Française, Inspection Generale de l'Elevage, Dakar, French West Africa, 1949. This is an interesting publication outlining the exploratory cruise of the French trawler Gérard-Tréca in the Atlantic ocean in the vicinity of Dakar. The trip was undertaken in an effort to locate, or determine the advisability of exploiting food fishes to feed the native populations, and investigate the species and abundance of the various fish and shellfish in this region. During the course of the voyage some oceanographic observations were also made. Most popular species taken in the area were varieties of sea bream (daurades, Diagramma, Parapristipoma, Acanthurus). Pictures with common and scientific names are given for several of the popular species taken. Data is also available for test drags, water temperatures, salinity rates, vessel equipment, and operating conditions. The final section of this publication is composed of charts for the areas of exploration with respect to ocean bottoms and species taken.

"Is the Pacific Sardine Disappearing?," by J. L. McHugh and Elbert H. Ahlstrom, article, The Scientific Monthly, June 1951, vol. LXXII, no. 6, pp. 377-84, illus., printed, single copies of magazine 75 cents. American Association for the Advancement of Science, 1515 Massachusetts Ave., NW., Washington 5, D. C. Reports on the augmented sardine research program on the Pacific Coast which is a cooperative venture in oceanography and fisheries biology. The major contributions are being made by the Bureau of Marine Fisheries of the California Division of Fish and Game, the South Pacific Fishery Investigations of the U. S. Fish and Wildlife Service, and the Scripps Institution of Oceanography of the University of California. In addition, the California Academy of Sciences is studying sardine behavior. The authors discuss the previous investigations, cause and effect, objective of the expanded program, and recent developments. "The surveys are yielding valuable information on the distribution, abundance, and life history of many species of fish," state the authors. "Much of this information should be of value to the sardine industry in indicating latent marine resources capable of being exploited in the lean years. Since there is a limit to the total amount of protein food that the ocean can produce, a decrease in abundance of one species may be accompanied by proportional increases in others. If this be so, we cannot take full advantage of our fishery resource as long as we exploit only a part of it by concentrating on certain species. Consequently, the fuller utilization of such underexploited fishes as anchovy, saury, and jack mackerel should be accompanied by adequate biological studies." According to the authors, "the Pacific sardine is not disappearing. The decline in sardine abundance seems to have been due to a succession of poor spawning seasons coincident with a change in the availability or an increase in the natural mortality of adults."

A Key to Some Southern California Fishes Based on Vertebral Characters, by Charles R. Clothier, Fish Bulletin No. 79, 83 p., printed, illus. Bureau of Marine Fisheries, Division of Fish and Game, San Francisco, Calif., 1950. The identification of larval forms of fish fragments found in stomach contents, and of fossil fish is often difficult. As an aid to such work, a study is being made of the vertebral characteristics of adult marine fishes found off the coasts of Mexico, California, Oregon, and Washington, and a key based on these characteristics is being constructed. Work was begun on this study in 1938 and has been continued as material and time were available. Because of the large

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number of species involved, it has been found necessary to divide the study into geographical units. The first unit is covered in this report and comprises 163 species of fish, omitting the Elasmobranchii, found between Point Conception and San Diego. Work will be continued on fishes from the areas to the north and south of this region and published as completed. The report discusses the use of the key based on the vertebral characteristics of adult marine fishes, presents a key to some southern California fishes, and includes a glossary of the terms used.

"Lampara Net-Pulling Gurdies," by J. B. Phillips, article, *California Fish and Game*, April 1951, vol. 37, no. 2, pp. 121-3, illus., printed. Division of Fish Game, State Fisheries Laboratory, Terminal Island Station, San Pedro, Calif. During the past three and one-half years the small lampara net boats at Santa Cruz have been operating with half as many men in a crew because of the installation of net-pulling gurdies, the author reports. In the spring of 1947 a captain of a lampara boat hit upon the idea of mounting two modified shark gill-net gurdies aboard his boat, each to pull in a wing of the net. This innovation proved successful and soon other Santa Cruz boats using lamparas installed similar gurdies. This article describes the gurdies and reports on their use by Santa Cruz lampara boats fishing for sardines.

Marine Products of Commerce, by Donald K. Tressler and James McW. Lemon, 782 p., illus., printed, \$18.00, second edition—revised and enlarged. Reinhold Publishing Corp., New York, N. Y., 1951. This is the best and most complete standard reference on the technical aspects of the commercial fisheries and other marine industries. The authors with the aid of 14 well-known specialists have dealt in a very comprehensive manner with the acquisition, handling, biological aspects, and the technology of the preparation and preservation of commercial products taken from the sea. This edition is revised and enlarged to cover the numerous technological advancements that have developed since the original publication 27 years ago. Nearly every chapter of the book has been completely rewritten to describe the most recent techniques, to bring up-to-date the statistical material and to incorporate information on several new marine industries not included in the earlier edition. Particular attention has been given to the manufacturing processes in the production of marine products, improved processing machinery, methods of refrigerator, transportation equipment, and types

of fishery gear with brief explanations of the methods of operation of this equipment. The illustrations are good and the diagrammatic material is excellently presented and clear. The book is well indexed which is of primary importance in the usefulness of a reference text. Inclusion of names of collaborating authors in the index probably would be helpful in many instances. This, however, is a minor omission.

Because of comprehensive treatment of the many fields of marine industry, it is impossible to comment even briefly on all of the chapters and subjects with which the book is concerned. Several chapters deserve special mention because of the broad scope of the subject matter or because of the relatively important part the process or equipment plays in everyday practice within the industry. Students and technicians alike will undoubtedly find particular interest in these sections of the book: Salt from sea water and the refining of sea salt—a description of the properties and uses of salt, market grades and specifications, and outlines of procedures in various types of processes. Magnesium, bromine, and other products from sea water—mainly description of processes. The agar and the algin industries—history, processes, and uses of these products. Pearl, mother-of-pearl, and precious coral industries. Biological aspects of fishes—a discussion of the fluctuations in abundance of the marine fishes and the characteristics of these species, including data on anatomy, color, migrations, geographical distribution, effect of fishing, age analysis, catch per unit of effort, tagging or marking, prediction of abundance, etc. Economic importance of the world's fisheries—an analysis of the economic value of the fisheries in regular trade with information on fishing areas, production by countries, production by species, per-capita consumption, utilization, and foreign trade. Fishing gear and fishery methods—a comprehensive chapter dealing with the development of fishing equipment; the relative importance of fishing gear and descriptions of all of the different types of gear used in the fisheries with some references to new electronic navigational instruments as well as instructions on preservation and care of fish netting. Transportation of fishery products—a detailed account of the methods of transportation and improvements in the handling of fishery products in transit with special attention to the various types of mechanical refrigeration systems used. Refrigeration and freezing of fish—a very important chapter, including the developments that have led to the expansion of the frozen fillet business which is now one of the primary segments of the industry.

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The preparation, packaging, freezing, and marketing of fish fillets is well integrated in the excellent treatment of the methods of refrigerating and freezing of fish. Preserving techniques—excellent chapters which contain specific detail on methods of salting fish, smoking and drying, canning, and miscellaneous processes of preserving fish. Fish meal and oil and fish-liver oils—section on processes and processing machinery dealing with these byproducts. Fish glue and isinglass and manufacturing of leather from marine sources—explanation of various processes and general information on the improvements and location of the industries. The whaling industry and the seal fisheries—a very good section on marine mammals.

Although this book will in general be of most use to technicians, it is certain to find its way into the office shelves of many fishing companies because of the wealth of fisheries information it contains.

—R. T. Whiteleather

Pacific Halibut Fishery Regulations (Effective April 11, 1951), 12 p., printed. This publication is accompanied by "Memorandum on 1951 Pacific Halibut Fishery Regulations," 10 p., processed. International Fisheries Commission, University of Washington, Seattle, Wash. Gives the 1951 regulations of the International Fisheries Commission adopted pursuant to the Pacific Halibut Fishery Convention between the United States and the Dominion of Canada, signed January 29, 1937.

Proceedings of the Alaskan Science Conference of the National Academy of Sciences, National Research Council, No. 122, April 1951, 222 p., printed, indexed, \$2.00. The National Research Council, National Academy of Sciences, Washington, D. C., 1951. This bulletin is a report of the proceedings of the Alaskan Science Conference, November 9-11, 1950, in Washington, D. C. This meeting was called in response to suggestions and requests from various scientific groups and government agencies actively concerned with Alaskan investigations. The objectives were to stimulate wider interest in research relating to the Alaskan areas, and to explore ways and means by which information and investigations may become more widely known and available to those with future interests in Alaska. Of particular interest to the members of the fishing industry are the sections of this publication dealing with oceanography and zoology. Articles on oceanography include: "The Sea Floor of the Gulf of Alaska," by R. S. Dietz and H. W. Menard; "Physical Oceanography of the Bering and Chukchi Seas," by E. C. LaFond, J. P. Saur, Jr., and J. F. Tully; "Topography of the Arctic Basin," by K. O. Emery; "Distribution of Oxygen and

Phosphate in the Arctic Sea," by Warren S. Wooster; "Flux of Latent and Sensible Heat at the Sea Surface of Foint Barrow, Alaska," by J. B. Wickham; "Physical and Chemical Oceanography of the Gulf of Alaska and the Aleutian Islands," by T. G. Thompson and C. A. Barnes; "Tides and Sea Level in Alaskan Waters," by H. A. Marmer; "Studies on Plankton of the Bering and Chukchi Seas and Adjacent Areas," by M. W. Johnson. Articles on zoology include "Territorial Fishery Administration," by C. L. Anderson; "Some Salmon Research Problems in Alaska," by W. F. Thompson; "Fishery Exploration and Development in Alaska," by A. W. Anderson; and "Management of the Marine Resources of Alaska," by S. Thompson.

The Refrigerating Data Book (Refrigeration Applications Volume—Third Edition), Daniel C. McCoy, Editor-in-Chief, 894 p. plus 224 p. of "Refrigeration Classified," illus., printed, \$6.00 in U. S. The American Society of Refrigerating Engineers, 40 West 40th St., New York, N. Y., 1951. This volume covers the use of the science and art of refrigeration and the application of refrigeration machinery and associated equipment to the user's needs. Certain fundamental information, such as conversion tables, refrigeration characteristics, refrigeration glossary, etc., are not included in this volume and reference to the Basic Volume will be necessary. The subject matter in this volume has been influenced by technological developments during the war and since the war, especially more uses of low-temperature refrigeration, frozen foods, and increased uses of refrigeration for industrial applications. Emphasis has been placed on food technology in many chapters.

The book is divided into eight major sections prepared by an associate editor who is a specialist in the over-all field covered by his section. These sections include: 1—Frozen Foods; 2—Cold Storage Practice; 3—Refrigeration in Food Manufacture; 4—Refrigerated Food Distribution; 5—Low-Temperature Application; 6—Industrial Applications of Refrigeration; 7—Comfort Air Conditioning; 8—Industrial Air Conditioning. Included also is a Refrigeration Classified Section of sources of supply for various items which are essential to the proper application of refrigeration equipment. In the section on Frozen Foods a chapter "Fish Refrigeration" by J. M. Lemon of the U. S. Fish and Wildlife Service is included.

Rough Fish Sales in Minnesota, Publication No. 37, 9 p., processed. Legislative Re-

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search Committee, State of Minnesota, State Capitol, St. Paul, Minn., December 1950. This is a research report issued pursuant to Minnesota State Proposal No. 42 (a proposal that the Legislative Research Committee study the methods of sale and prices received from the sale of rough fish.....). The report points out that all rough fish removed from Minnesota waters are sold (with the exception of small local sales) by the State. The reason for adopting this system, markets for Minnesota fish, and a comparison of rough fish prices are presented in this report.

The Sea Lamprey, Publication No. 33, 9 p., processed. Legislative Research Committee, State of Minnesota, State Capitol, St. Paul, Minn., November 1950. This is a report on the sea lamprey section of Minnesota State Proposal No. 42. This proposal requested the Legislative Research Committee to study the methods of sale and prices received from the sale of rough fish, and also study the infestation of sea lampreys in Lake Superior and possible methods of removal. The report discusses the species of sea lampreys, the spread of these fish into the Great Lakes, commercial fishing in Minnesota waters of Lake Superior, the lake trout catch in the Great Lakes, and methods of control and lamprey-control programs.

United States Exports of Domestic and Foreign Merchandise (Commodity by Country of Destination), Calendar Year 1950, Report FT 410, Part 1, 141 p., processed, 25 cents. Bureau of the Census, U. S. Department of Commerce, Washington, D. C., April 1951. (For sale by U. S. Department of Commerce at Washington, its field offices, or the Superintendent of Documents, Washington 25, D. C.) This publication contains a compilation of United States exports of all commodities included in Groups 00 through 5. Included are edible fishery products by commodity. The statistics give quantity, value, and country to which shipped.

United States Imports of Merchandise for Consumption (Commodity by Country of Origin), Calendar Year 1950, Report No. FT 110, 165 p., processed, 25 cents. Bureau of the Census, U. S. Department of Commerce, Washington, D. C., April 1951. (For sale by U. S. Department of Commerce at Washington, its field offices, or the Superintendent of Documents, Washington 25, D. C.) This publication contains a compilation of United States imports of all merchandise for consumption (including fishery products, byproducts, and

related products). The statistics by commodity give quantity, value, and country of origin.

Yearbook of Fisheries Statistics, 1948-49 (Annuaire Statistique des Pêches, inclue un suplemento en espanol), 326 p., printed, US\$3.50. Food and Agriculture Organization of the United Nations, Washington and Rome, 1950. (For sale by International Documents Service, Columbia University Press, New York 27, N. Y.) This is the second FAO annual bulletin on fisheries statistics of the world, and it continues and expands the data published in the 1947 yearbook. (The 1947 data were supplemented throughout 1948 and 1949 by statistics published in the FAO monthly Fisheries Bulletin.) These two yearbooks are the first compilations of fisheries statistics on a worldwide scale. The present yearbook does not repeat the information presented in the 1947 volume except where the data are useful to tie in figures and provide summaries. For most purposes, the statistical coverage begins with the year 1938 and ends with the year 1949. Both general surveys and detailed statistics are presented. Statistics for landings and external trade are summarized by country. Brief information is given on craft and fishermen, and on prices. Incomplete statistical records on fisheries activities in many parts of the world prevent complete coverage, and FAO states that within the next few years much of the lacking data will gradually be supplied. The current yearbook provides rather detailed comments on classifications and definitions. In addition, as an aid in identifying the species referred to by local common names in the landings tables, a nomenclature section, prepared by the Biological Branch of the FAO Fisheries Division, lists scientific and common names by country. The lists are based for the most part on the common names used by specific countries in reporting their catches. Scientific names were taken from regional faunal studies or lists recommended by the respective countries. Given in this publication are general summaries of world landings by continent; monthly landings in 10 countries; disposition of total landings in 18 countries; summary of landings in 35 countries by species groups, and for certain countries by species; utilization of fishery products by certain countries, including commodity forms as produced; and imports and exports by commodity groups for a number of countries. Written in English and French, it also contains the Foreword and the general notes in Spanish.



BROILED HALIBUT STEAKS WITH CHEESE

1/4 CUP BUTTER OR OTHER FAT, MELTED 1/4 POUND SHARP PROCESSED CHEESE
2 POUNDS HALIBUT STEAKS 1 TEASPOON SALT
1/8 TEASPOON PEPPER



Cut fish into serving-size portions. Sprinkle both sides with salt and pepper. Place fish on a greased broiler pan about 2 inches from the heat and brush with fat. Broil from 5-8 minutes or until slightly brown, baste with melted fat and turn carefully. Brush other side with melted fat and cook 5-8 minutes or until fish flakes easily when tested with a fork. Cover each steak with thin slices of cheese and return to broiler only long enough for cheese to melt. Remove to a hot platter, garnish, and serve immediately. Serves 6.

A Fish and Wildlife Service tested recipe. This is one in the series of recipes using fishery products tested and developed in the Service's test kitchens.

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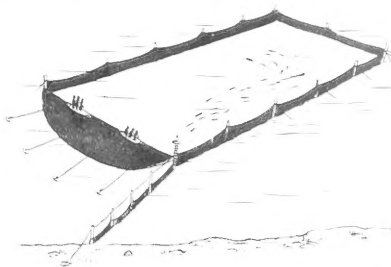
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TURKISH FISHERY RESOURCES

Fishery Leaflet No. 390, Fishery Resources of Turkey, contains information on the Turkish fishing industry. Particular emphasis is given to species of migratory fish passing through the Bosphorus to go and spawn in the Black Sea in the spring, and returning to the Marmara, Aegean, and Mediterranean Seas in the autumn. It is assumed that 70 percent of the total fish produced in Turkey are members of this migratory group, including bonito, skipjack, mackerel, bluefin tuna, swordfish, and hering. A table giving American and scientific names for Turkish fresh- and salt-water fish is included.



LARGE FIXED FISH TRAP COMMONLY USED IN THE BOSPHORUS WITH OUTLOOK MAST. TRAP CONSISTS OF A LEAD OR FENCE CONNECTED WITH THE SHORE WHICH DIRECTS THE FISH INTO THE TRAP. ANCHORED PILES HOLD THE NETTING FORMING THE TRAP AND THE LEAD. FISH ARE CONCENTRATED IN A CORNER OF THE TRAP FROM WHICH THEY ARE BRAILED.

ing, sale, and consumption of these fishery products, exports of fishery products, and the principal types of fishing vessels. Data are included on the estimated capacity of local cold storages, the canneries, and principal laws and regulations pertaining to fishing. Fishing in Turkey, however, has not yet developed to the level where the term "fishing industry" with today's connotation can be employed because of their antiquated methods, limited canning facilities, and inadequate gear and vessels.

Free copies of this publication (Fishery Leaflet No. 390) are available free upon request from the Division of Information, U.S. Fish and Wildlife Service, Washington 25, D. C.

This 24-page publication is illustrated with sketches of the various types of fishing gear and the standard type of fishing boats. Information is also presented on the processing,

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